INSTALLATION INSTRUCTIONS

61301604981 Rev. B

7800A SERIES FLOOR MOUNTED CART & UTENSIL WASHER

INSTALLATION INSTRUCTIONS

GETINGE

7800A SERIES

FLOOR MOUNTED CART AND UTENSIL WASHER

Getinge USA, Inc.
1777 East Henrietta Road
Rochester, New York 14623-3133
Phone: (800) 950-9912
Facsimile: (800) 950-2570

INSTALLATION INSTRUCTIONS 61301604981

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Related Publication:

Operator Manual	**61301604768**
Service Manual	**61301605323**

DESCRIPTION OF SYMBOLS AND NOTES IN MANUAL

The following symbols with related notes appear in this manual.

"Warning" notes alert the user to the possibility of personal injury.

"Caution" notes alert the user to the possibility of damage to the equipment.

"Notes" alert the user to pertinent facts and conditions.

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- *POSSIBILITY OF INJURY: Misuse of equipment may result in personal injury.*
- *POSSIBILITY OF EQUIPMENT DAMAGE: Misuse of equipment may result in equipment damage.*

The 7800A Washer is designed to clean and dry case carts, stands, utensils, containers, tote boxes, and similar bulk items. This equipment is NOT intended for use other than expressly stated.
If the 7800A Washer is used in a manner not specified by Getinge USA, Inc., the protection provided by the equipment may be impaired.

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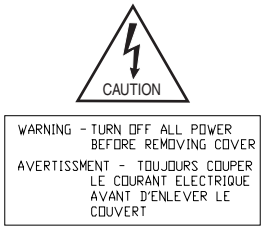
Safety Labels Used on the Equipment

The following safety labels are used on the 7800A washer:


CAUTION
WARNING - TURN OFF ALL POWER BEFORE REMOVING COVER
AVERTISSMENT - TOUJOURS COUPER LE COURANT ELECTRIQUE AVANT D'ENLEVER LE COUVERT

You must remove all power to the washer before removing the back cover to the washer chamber light assembly.

High voltage is present inside the control box. You must remove all power to the washer before opening the door to the control box.

REPLACE FUSE AS MARKED
WARNING
RISK OF FIRE. REPLACE FUSE AS MARKED.
AVERTISSEMENT
RISQUE D'INCENDIE. REMPLACER AVEC FUSIBLE DE MÊME CALIBRE.

If you change a fuse, you must use an equivalently rated replacement. Refer to “Spare Parts” on page C-2 in the Operator Manual for a list of spare fuses.

If you are inside the washer when someone closes the door, press firmly on this label on the inside of either door to stop the washer, if applicable, and open the door.

Section 1 Installation Requirements

General Description

The Getinge 7800A Series Floor Mounted Cart and Utensil Washer is a fully automatic, large capacity, hydro-spray washer that is used to clean and dry case carts, stands, utensils, containers, tote boxes, and similar bulk items.

The washer can be installed in a shallow pit or installed at floor level. When installed in a pit, the floor of the washer's chamber is level with the room floor, which allows the direct loading and unloading of carts. When the washer is installed at floor level, the floor of the chamber is higher than the room floor. Ramps are then provided as standard equipment to facilitate loading and unloading.

The washer is designed for pass-through operation. Items to be cleaned are placed in the washer's compartment at the load end door. After cleaning, the items are removed from the unload end door at the opposite end of the washer.

The washer is generally installed in a facility's decontamination room with the unload end door opening out into a clean-preparation area. The unit is available in three sizes, which are determined by compartment length: 80" (2032 mm), 98" (2489 mm), and 112" (2845 mm), and which correspond to models 78003A, 78004A, and 78005A, respectively.

Treatment solutions are delivered by separate oscillating (back and forth) wash and rinse manifolds equipped with spray nozzles. Detergent and rinse aid solutions are dispensed automatically as a standard feature.

A standard cycle consists of the following sequential phases: wash, standard rinse (or optional purified rinse), drying, and exhaust. The length of a cycle's phase can be adjusted at the touch control panel.

Figure 1–1. 7800A Series Floor Mounted Cart and Utensil Washer

Model Identification

The rating plate for a 7800A washer is affixed to the inside of the control box.

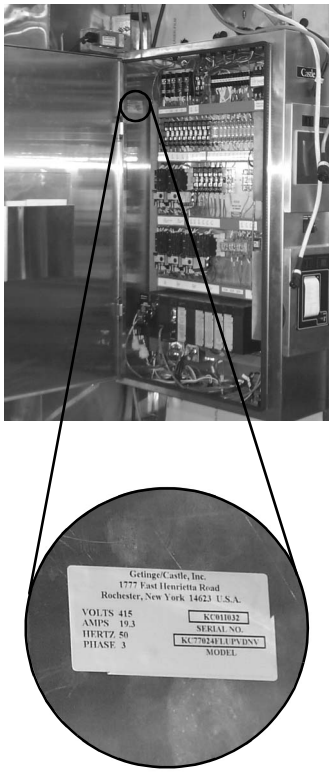
Record the model type and serial number (S/N) from the rating plate.

TYPE: _____

SERIAL NO: _____

Include the model type and serial number when communicating with Getinge, USA.

Figure 1–2. Rating Plate Location



Utilities and Specifications

Utility requirements and specifications are included on sheet 2 of the appropriate rough-in drawing (pit mounted or floor mounted version). Refer to “Rough-In Drawings” on page 3-1.

Installation Advisory

A 7800A washer is assembled at the factory, tested, and then disassembled for shipment. Extensive on-site reassembly is required. The installation instructions in this manual are intended as the primary reference for accomplishing this reassembly. Every effort has been made to make this information as accurate as possible.

Where applicable, installers should refer to specifications contained in the product information documents, such as Assembly drawings, that have been forwarded to local Getinge USA product support personnel. Rough-in drawings can be found in “Rough-In Drawings” on page 3-1.

Washer Options

There are a number of options that may be included with your washer. These options affect the procedures that apply to your specific installation.

Size (Load Length)

There are three models of the 7800A washer, each corresponding to a different compartment size, or load length (all models are the same width):

- 78003A is 80" (2032 mm) long
- 78004A is 98" (2489 mm) long
- 78005A is 112" (2845 mm) long

All models have five or six side panels and three top panels. The middle panel on the front (service) side, the end panels on the rear, and the top panels at each end are common for all three washer lengths. The sizes of the end panels on the front side, the middle panel on the rear side (if applicable), and the middle top panel depend on the washer length.

Floor Mount vs. Pit Mount

A floor mounted washer requires the installation of ramps to provide access to the washer. The interior floor of a pit mounted washer is level with the finished floor of the facility.

Left Side vs. Right Side Controls

The location of controls on your washer also determines the location of the service area, as well as the barrier flanges and service enclosure that may be provided with your washer.

Left Hand vs. Right Hand Door Mounting

The orientation of the load and unload door mountings determines the doors and door panels for your washer.

Barrier Flanges and Service Enclosure

Your installation may have barrier walls at the load or unload end of the washer, or both, as well as have a service enclosure.

Electrical Service

The electrical service at your facility determines the specific high voltage devices (motors, pumps, etc.), transformer, and control box provided with your washer.

Vented vs. Non-vented

A vented washer has an automatic damper that connects directly to the ventilation system of your facility. A non-vented washer has a condenser (with associated electric and plumbing connections) mounted on the top of the washer to remove moisture from the air that is exhausted from the washer.

Purified Water Rinse

An optional purified rinse phase uses water from the customer's purified water supply.

Printer

If your washer has the printer option, the printer is already mounted on the control box.

Seismic Anchoring

If your washer has the seismic anchoring option, the sump assembly and the mechanical core are secured to the floor.

Shipping Configuration

A disassembled 7800A washer is shipped on five pallets and one box of various sizes. The maximum size of any one pallet may be as large as 130" x 68", depending on the length of the unit. For stability during transit, selected pallets are often pegged (with nails) to the floor of the truck.

Moving the disassembled washer from the truck to the installation site requires the use of any available combination of the following:

- fork lift
- pallet jack
- dollies
- Johnson bars

A sufficient supply of commonly used fasteners (#10-32 and 1/4-20, for example) is bagged for shipment. Speciality hardware and fasteners (door latches and hinges, for example) are labeled and bagged separately for shipment.

Many disassembled items, such as plumbing and panel sections, are marked with handwritten numbers with black grease pen to identify their location, orientation, or connection points. Take care not to inadvertently smudge or erase these identifying marks.

Tools and Materials Required

The following tables list the specific tools and materials required at the installation site. Items marked with an asterisk * are supplied by Getinge USA.

Table 1–1. Tools Required

Tool	Quantity
Common Hand Tools	Assorted
12' Pipe Clamp	2
C-Clamp	2
Johnson Bar	1
Pry/Pinch Bar	2
Caulking Gun	1
1/4-20 Tap, Short	1
10-32 Tap, Short	1
10-32 Tap, Long	1
#7 Drill Bit	2
#21 Drill Bit	2
Torpedo Level	1
4' Level	1
Scratch Awl	2
Tape Measure	1

Table 1–2. Materials Required

Material	Quantity
* Silicone Adhesive	8 tubes
* Silicone Primer	1 pt
* Thinner	1 pt
* Polish	1 container
* Stainless Steel Nuts, Bolts, Washers, Lock Washers	Assorted
* Wire Nuts, Tie Wraps	Assorted
* 3" x 4" Stainless Steel Shims: • 12 ga • 14 ga • 16 ga • 18 ga	 10 10 10 10

Material	Quantity
1" x 4" x 6" Wood Block	2
2" x 4" x 52" Wood Block	4

Four rigid 3/4" x 60" long pipes are recommended for use if a floor mounted washer is to be assembled out-of-position, then moved to its intended operational site. The pipe is used to roll the washer into position after assembly.

Section 2 Installation

Assemble the Washer Structure

This section contains procedures for assembling the basic structure of the washer compartment. Refer to the following sections.

- “Install the Base/Sump Assembly” on page 2-1
- “Position the Mechanical Core” on page 2-3
- “Assemble the Washer Panels” on page 2-5
- “Channel Fillers and Threshold Assemblies” on page 2-11
- “Door Assembly” on page 2-12

Install the Base/Sump Assembly

General Instruction

If the load or unload end of the base is not marked, check the configuration of the sump against the rough-in drawing (page 3-1) to determine the correct orientation.

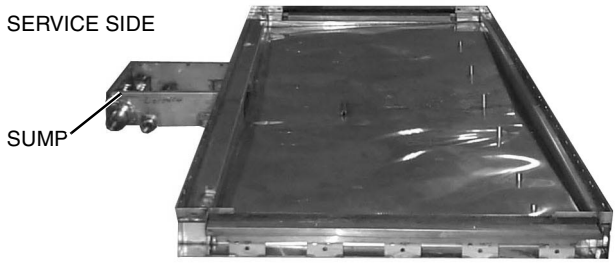
NOTE

Some installation sites may have an existing wall in close proximity to the non-service side of the washer that could interfere with the assembly of the washer’s side panels. If this situation exists, you will have to seat the base temporarily out-of-position until the side, top, and non-service side trim panels are assembled. You can then maneuver the unit to its operating position, where you can level and anchor it, if required.

Installation

1. Move the base into its operating position.

Figure 2–1. Base/Sump Assembly



2. Check the base for level.
   Use the 4' level to check from all sides of the base and in all directions. Adjust the level if necessary using the stainless steel shims that are provided.

CAUTION

Failure to critically level the base will result in the misalignment of mounting holes and will make assembly of the washer panels difficult.

If seismic anchoring is required, two 2 1/2" flanges (with anchor bolt holes) must be bolted to the bottom frame of the base (one flange on each end of the washer).

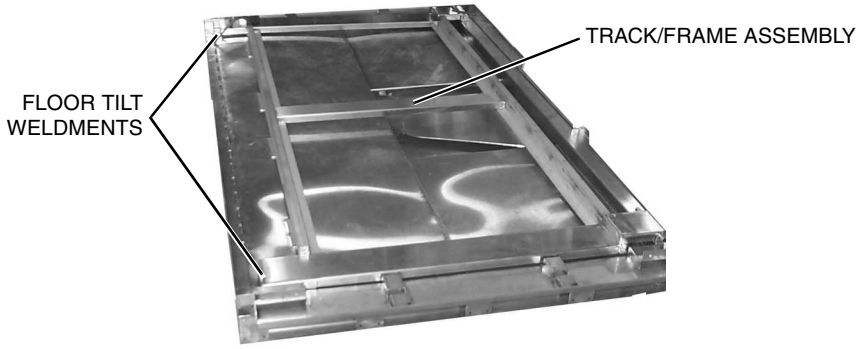
3. Drill holes for the anchors through the holes in the base flange.

Table 2–1. Drilling Specifications

Drill Bit Size	1/2”
Embedment	2 1/4” minimum
Torque	50 ft.-lb.

4. Secure the base to the floor using 1/2" bolt stud anchors suitable for your floor structure.

Figure 2–2. Track/Frame Assembly



5. Lay the track/frame assembly into the base so that the floor tilt weldments are on the non-service side of the washer.
6. Lay the floor grates in the track of the track/frame assembly.

NOTE

The 78003A model (88" long) has two 34" floor grates. The 78004A model (106" long) has two 34" floor grates and one 16" floor grate. The 78005A model (120" long) has two 34" floor grates and one 30 1/8" floor grate.

7. Lay the cardboard sheet over the floor grates to protect from scratches while you complete the installation.

Position the Mechanical Core

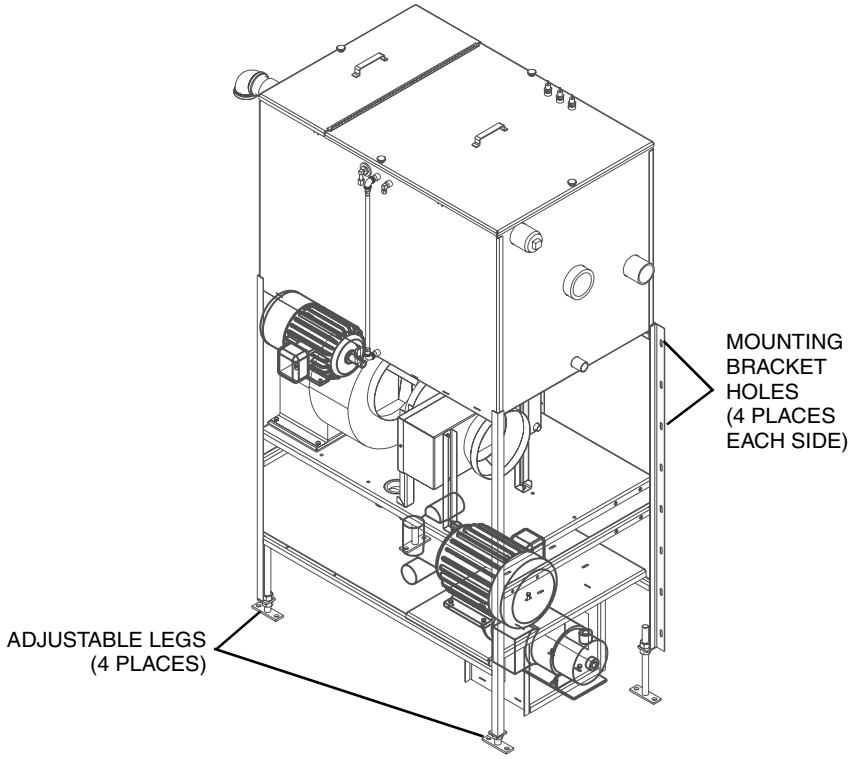
Objective

Position the mechanical core in its approximate location on the side of the washer.

Installation

Refer to Figure 2–3. Mechanical Core.

Figure 2–3. Mechanical Core



WARNING

Silicone primer (orange) is extremely flammable, harmful if swallowed or inhaled, and harmful to eyes or skin. Wear protective clothing, gloves, and eyewear when using this product. Keep it away from heat, sparks, and flames. Store upright in a cool place, less than 30°C (85°F). Keep the container closed when not in use. Use only in a well-ventilated area. Avoid breathing vapors.

CAUTION

Silicone primer stains/discolors clothing, stainless steel surfaces, flooring, etc. Avoid accidental spills. Avoid spreading this substance onto cosmetic surfaces of the washer.

1. Using a fork lift, move the mechanical core into place on the service side of the washer, approximately one inch away from where the washer side walls will be.

NOTE ▶

If your washer has a left-hand service area, one of the adjustable legs rests on the pad on the right side of the sump box. If the washer has a right-hand service area, one of the adjustable legs rests on the pad on the left side of the sump box.

2. Clean mating surfaces on the dryer duct flange and around the dryer duct cutout on the washer side panel with thinner, and treat with silicone primer.

NOTE ▶

You will apply silicone caulk to the dryer flange after the washer walls are assembled and just before you attach the mechanical core to the washer.

3. Set the washer light assembly on the dryer duct shelf.

NOTES ▶

- *You will secure the light to the side panel after the washer panels are assembled.*
- *If the return pump was shipped already attached to the sump, it may be necessary to temporarily remove the pump until after the mechanical core is positioned.*

Assemble the Washer Panels

Objective

Assemble the door, side, and top panels. Install the required number of interior side panel seam cover strips.

The 7800A washers have five or six side panels and three top panels. The middle panel on the front (service) side, the end panels on the rear, and the top panels at each end are common for all three washer lengths. The sizes of the end panels on the front side, the middle panel on the rear side (if applicable), and the middle top panel depend on the washer length. The service side middle panel provides the cutouts for the dryer air duct and for the wash and rinse manifolds. The top panels at each end of the washer provide the cutouts for the intake and exhaust assemblies.

Each side panel carries a number that matches the number on the base's frame. The width of a top panel is the width of the washer (52"). The side panels have 7/16" diameter holes that carry 3/8" thru bolts (five on each side of the washer) to hold the panels together. The top panels have holes to carry two thru bolts.

There is no established order to follow for panel assembly. You can start from the load or the unload end. You can assemble all the vertical panels first, followed by the top panels; or you can add individual top panels as you erect the vertical panels. The method illustrated below starts from the load end and progressively adds top panels as the vertical panels are erected.

Installation

You must clean all mating surfaces with thinner, then treat with silicone primer, and then apply a generous amount of silicone sealant. This includes all instances where panels are secured to the washer base or to other panels, as well as the seam cover strips inside the washer.

Silicone primer (orange) is extremely flammable, harmful if swallowed or inhaled, and harmful to eyes or skin. Wear protective clothing, gloves, and eyewear when using this product. Keep it away from heat, sparks, and flames. Store upright in a cool place, less than 30°C (85°F). Keep the container closed when not in use. Use only in a well-ventilated area. Avoid breathing vapors.

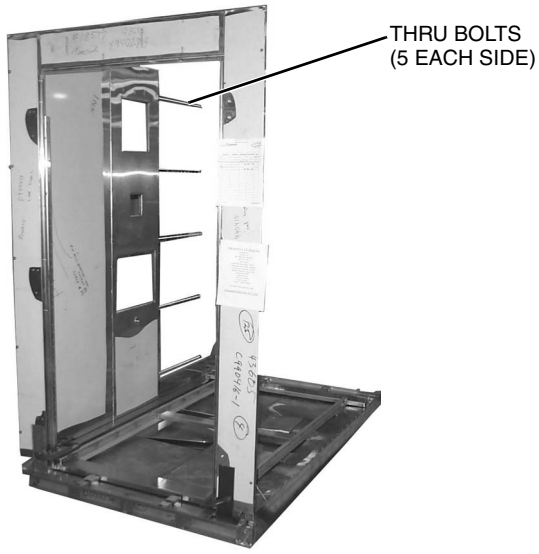
Silicone primer stains/discolors clothing, stainless steel surfaces, flooring, etc. Avoid accidental spills. Avoid spreading this substance onto cosmetic surfaces of the washer.

1. Attach the load end door panels to the base.
   There are two vertical panels, each with three mounting holes at the top to attach to the horizontal panel.
   a. Position a vertical panel and use a C-clamp to hold the panel in place temporarily.
   b. Secure the bottom of the panel to the base frame with four 1/4-20 fasteners (1/2" hex head bolts and lock washers) and remove the clamp.
   c. Repeat steps a and b for the other vertical panel.

Figure 2–4. Door Panels

   d. Secure the horizontal panel between the two vertical panels with 1/4-20 fasteners (six each 1/2" hex head bolts and lock washers).
   e. Plumb and square the door opening.
2. Attach the load end rear (non-service side) side panel to the base and to the load end door.
   a. Position the load end side panel.
   b. Partially insert five 3/8" diameter thru rods through the 7/16" diameter holes to stabilize and align the side panel with the door panel.
   c. Use pipe clamps to draw the panels tight.
   d. Secure the bottoms of the side panel to the base frame with 1/4-20 fasteners (1/2" hex head bolts and lock washers).

Figure 2–5. Side Panels



NOTE

Skip step 3 below if the washer does not have middle panel sections.

3. Attach the rear middle side panel to the base and to the load end panel.
   a. Remove the pipe clamps.
   b. Position the middle rear side panel.
   c. Extend the five thru bolts to stabilize and align the panels with the load end side panel.
   d. Attach the pipe clamps to draw these panels tight.
   e. Secure the bottoms of the middle side panel to the base frame with 1/4-20 fasteners (1/2" hex head bolts and lock washers).
   f. To ensure side panel alignment, attach C-clamps and 2x4" wooden blocks across the top edge of the adjoining panels at the vertical seam.

4. Attach the unload end rear side panel to the base and to the middle side panels.
    a. Remove the pipe clamps.
    b. Position the unload end rear side panel.
    c. Extend the five thru bolts to stabilize and align this panels with the previously erected panels.
    d. Attach the pipe clamps to draw these panels tight.
    e. Secure the bottom of the side panel to the base frame with 1/4-20 fasteners (1/2" hex head bolts and lock washers).
    f. Move the C-clamp and 2" x 4" wooden block assemblies to the vertical seams created by the installation of these panels.
5. Repeat steps 2 through 4 to install the front (service side) load, middle, and unload side panels, respectively.
6. Attach the unload end door panel to the base and to the unload end side panels.
    a. Remove the pipe clamps.
    b. Position one vertical panel.
    c. Extend the thru bolts on that side.
    d. Attach the pipe clamps to draw the door panel tight.
    e. Repeat steps b through d for the other vertical panel.
    f. Secure the horizontal panel between the two vertical panels with 1/4-20 fasteners (six each 1/2" hex head bolts and lock washers).
    g. Plumb and square the door opening.
    h. Secure the thru bolts at both ends of the washer with 3/8" acorn nuts and flat washers.
    i. Secure the bottom legs of the panel to the base frame with four 1/4-20 fasteners (1/2" hex head bolts and lock washers).

7. Attach the load end top panel to the door panel and to the load end side panels.
   a. Position the load end top panel.
   b. Secure the top panel to the door and load end side panels with 1/4-20 fasteners (1-3/4" hex head bolts, flat washers, and lock washers).
   c. Partially insert the two remaining 3/8" diameter thru bolts through the 7/16" diameter holes in the panel.

NOTE

Skip step 8 below if the washer does not have middle panel sections.

8. Attach the middle top panel to the load end top panel and to the middle side panels.
   a. Position the middle top panel.
   b. Extend the two thru bolts.
   c. Secure this panel to the middle side panels with 1/4-20 fasteners (1-3/4" hex head bolts, flat washers, and lock washers).
9. Attach the unload end top panel to the unload end side panels and to the unload end door panel.
   a. Remove the C-clamp assemblies.
   b. Position the unload end top panel.
   c. Extend the two thru bolts.
   d. Secure this panel to the unload end door and side panels with 1/4-20 fasteners (1-3/4" hex head bolts, flat washers, and lock washers).
   e. Secure the thru bolts at both ends of the washer with 3/8" acorn nuts and flat washers.

10. Secure the mechanical core to the side panels.
    a. Use the adjustable legs to align the holes in the mounting bracket and in the dryer duct flange with the corresponding holes in the side of the washer.
    b. From inside the washer, apply silicone sealant to the surface of the dryer flange.
    c. Secure the mechanical core to the washer with eight sets of 1/4-20 hardware.
    d. Secure the dryer duct flange to the cutout in the washer side panel with eight sets of 1/4-20 hardware.

NOTE ▶

The mechanical core assembly will slowly move into place as you tighten the fasteners.

11. Inside the washer, attach the panel seam cover strips over the vertical seams between adjoining side panels using #10-32 screws and lock washers.

Channel Fillers and Threshold Assemblies

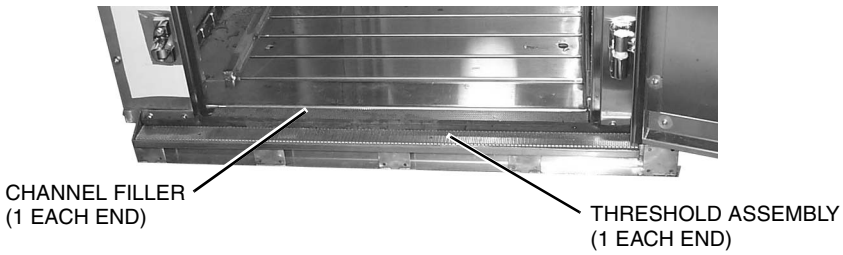
Objective

Install a channel filler on the floor just inside each washer door. Install a threshold assembly just outside each washer door.

Installation

Refer to Figure 2–6. Channel Fillers and Threshold Assemblies.

Figure 2–6. Channel Fillers and Threshold Assemblies



1. Position one channel filler at each end of the washer and secure each to the base with two #10-32 x 3/8" phillips head screws.
2. Position one threshold assembly at each end of the washer with the gasket facing toward the inside of the washer and secure each to the base with two #10-32 x 3/8" phillips head screws.

Door Assembly

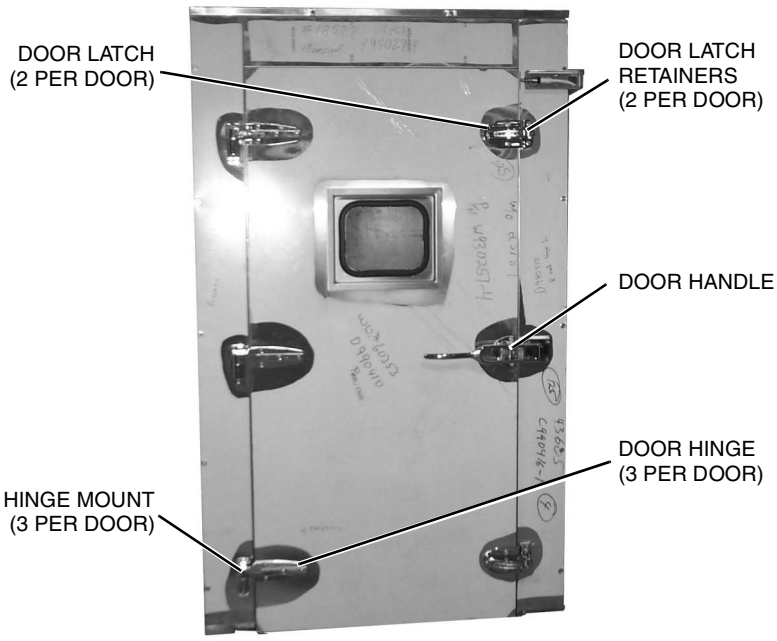
Objective

Attach hardware to the doors and related door panels. Install the load and unload end doors on the washer. Plumb and square both door openings.

Installation

Refer to Figure 2–7. Door Assembly.

Figure 2–7. Door Assembly



WARNING

A washer door is heavy and awkward to handle. Take care to avoid crushing or strain injuries.

NOTE

The washer may be shipped with all of the hardware (hinges, latches, striker plates, etc.) already mounted on both the doors and the door panels. If so, start with step 3 below.

1. Attach the following items to each door panel:
    a. Attach three hinge mounts using 1/4-20 fasteners (nine 1" phillips head screws).
    b. Attach two door latch retainers, two door latch shims, and two spacers using 5/16-18 fasteners (four each 2" hex head cap screws and lock washers).
    c. Attach the striker plate assembly using 1/4-20 fasteners (four 2" phillips head screws).
2. Attach the following items to the door:
    a. Attach two door latches using 5/16-18 fasteners (four each 1" hex head cap screws and lock washers).
    b. Attach three hinges using 1/4-20 fasteners (twelve each 1” phillips head screws).
    c. Attach the door handle using 5/16-18 fasteners (four each 1" hex head cap screws and lock washers).
3. Check the door opening for plumb and square. If necessary, use the shims that are provided.
4. Mount the door on the washer.
    a. Raise and maneuver the door until its hinge posts are in vertical alignment over the three hinge mounts attached to the door panel.
    b. When aligned, lower the door and properly seat all three posts in their respective mounts.
    c. Check for correct operation of the door.

Repeat steps 1 through 4 for the other door assembly.

After the plumb and square of all doors is checked and corrected, it may be easier to lift the doors off their hinges and set them aside until the washer installation is complete.

Install Components on the Outside of the Washer

This section provides instructions for installing equipment on the outside of the washer. The procedures are presented in a recommended order (some larger components are easier if they are done earlier, for example). Refer to the following sections.

- “Return Pump” on page 2-15
- “Washer Light Assembly” on page 2-16
- “Spray Manifold Drive Motor” on page 2-17
- “Control Box” on page 2-18
- “Dispenser Float Switch Junction Box, Detergent Dispenser, and Rinse Aid Dispenser” on page 2-19
- “Emergency Stop Switch” on page 2-21
- “Unload End Indicator Panel Box” on page 2-22
- “Door Proximity Switches” on page 2-23

Return Pump

Objective

Install the return pump.

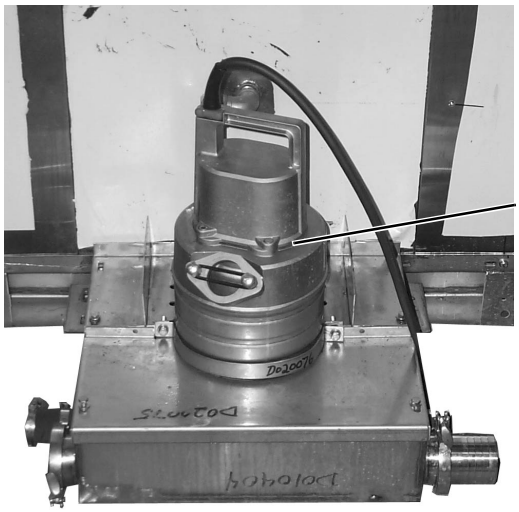
Installation

NOTE

The return pump may be shipped from the factory already installed in the sump.

Refer to Figure 2–8. Return Pump.

Figure 2–8. Return Pump



1. Slide the low suction collar over the bottom of the return pump and position the pump in the sump.
2. Secure the pump to the flange on the front sump cover by attaching the two ends of the metal strap with 5/16"-18 fasteners (2" hex head cap screws and lock washers) to the flange.

Washer Light Assembly

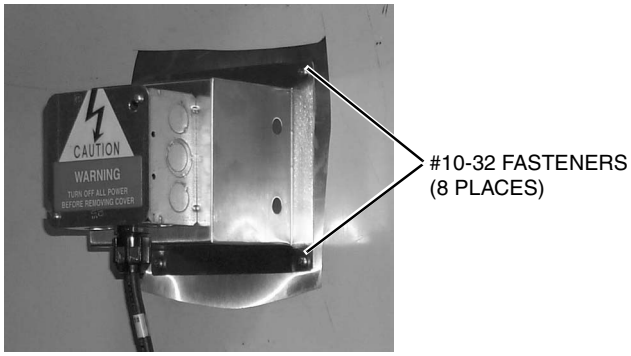
Objective

Install the interior light in the cutout located on the front (service side) wall.

Installation

1. Align the holes in the light assembly with the holes surrounding the cutout in the front panel.
2. Secure the light assembly to the front panel with eight #10-32 fasteners (phillips head screws and flat washers) as shown in Figure 2–9.

Figure 2–9. Washer Light Assembly



Spray Manifold Drive Motor

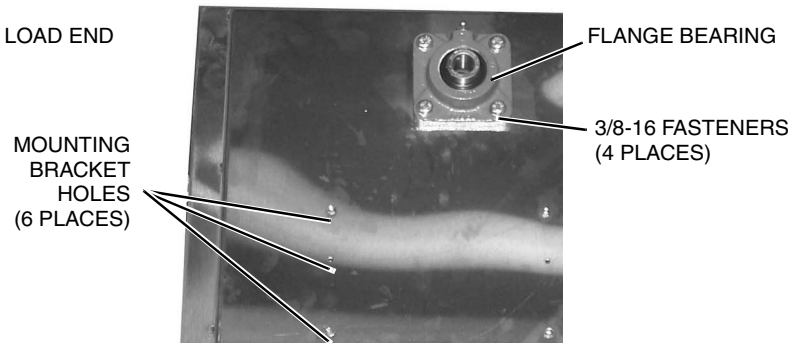
Objective

Assemble the spray manifold drive's flange bearing and the spray manifold drive motor.

Installation

Refer to Figure 2–10. Spray Manifold Drive Flange Bearing.

Figure 2–10. Spray Manifold Drive Flange Bearing

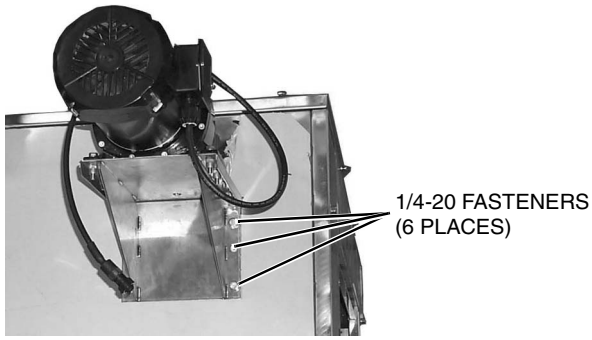


1. Use 3/8"-16 fasteners (four each 1" hex head cap screws and lock washers) to loosely secure the flange bearing in position at the upper corner of the load end side panel.

NOTE

You will tighten the bearing after you assemble the drive shaft and couple it to the drive motor (refer to "Chain Drive Assembly" on page 2-36).

Figure 2–11. Manifold Driver Motor



2. Position the spray manifold drive motor and bracket over the six threaded holes located in the panel directly below the flange bearing and use 1/4-20 fasteners (six each 3/4" hex head cap screws, lock washers, and flat washers) to secure the mounting fixture to the panel.
3. Slip the proximity switch collar over the drive shaft of the motor and secure by tightening the hex head cap screw.

Control Box

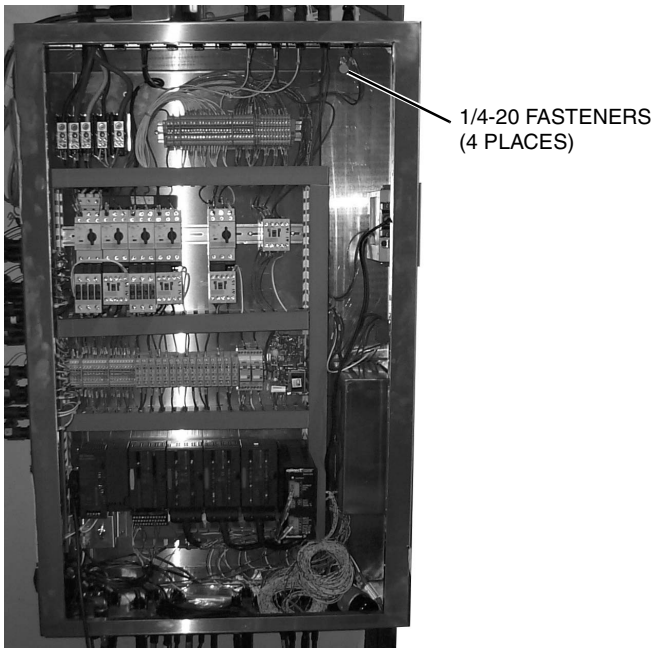
Objective

Attach the control box to the load end side panel.

Installation

Refer to Figure 2–12. Control Box.

Figure 2–12. Control Box



1. Remove the pins from the door hinges and set the door aside.
2. Loosely secure one 1/4-20 fastener (4 each 3/4" hex head cap screws, flat washers, and lock washers) to the panel.
3. Position the control box so that the mounting holes are aligned with the screws and then hang the control box.
4. Insert the remaining three sets of fasteners.
5. Tighten the four screws to secure the control box to the panel.
6. Install the door on the control box.

Dispenser Float Switch Junction Box, Detergent Dispenser, and Rinse Aid Dispenser

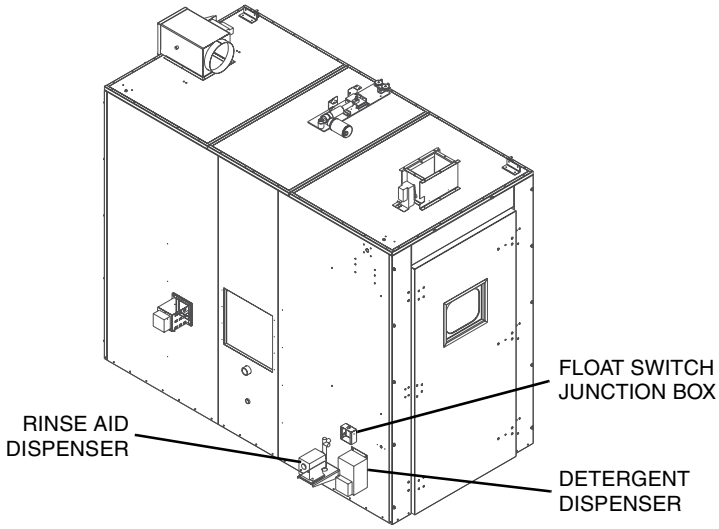
Objective

Install the junction box for the detergent and rinse aid dispenser float switches on the front (service side) panel at the load end of the washer. Install the detergent and rinse aid dispensers.

Installation

Refer to Figure 2–13. Float Switch Junction Box and Dispensers

Figure 2–13. Float Switch Junction Box and Dispensers



1. Install the float switch junction box.
   a. Remove the face plate of the box.
   b. Align the mounting holes in the back of the box with the two #10-32 threaded holes on the front side panel at the load end of the washer.
   c. Use #10-32 fasteners to secure the box to the panel.
   d. Install the face plate.

NOTE

If a remote chemical pumping station is being used, it is required that the stations are programmed to pump for the entire time that the output electrical signals are active. The wash control program varies the length of the chemical pumping signal depending on the specified cycle parameter.

2. Install the rinse aid dispenser.
   a. Position the rinse aid pump and bracket on the side panel and align with the holes in the panel.
   b. Secure the pump mount to the washer with four #10-32 fasteners (phillips head screws and lock washers).

3. Install the detergent dispenser.
    a. Align the mounting holes in the back plate with the set of threaded holes in the panel.
    b. Use two #10-32 fasteners to secure the dispenser in place.

Emergency Stop Switch

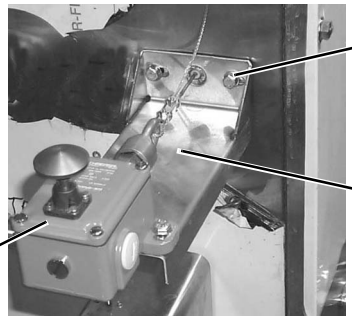
Objective

Attach the emergency stop switch to the side panel of the washer. The switch is mounted at the load end of the washer, under the control box.

Installation

Refer to Figure 2–14. Emergency Stop Switch.

Figure 2–14. Emergency Stop Switch



1. Mount the emergency stop switch to the mounting bracket using two 1/4-20 fasteners (hex head cap screws, lock washers, and flat washers).
2. Align the two holes in the mounting bracket with the holes on the load end side panel.
3. Secure the bracket and switch to the washer with two 1/4-20 fasteners (hex head cap screws, lock washers, and flat washers).

Unload End Indicator Panel Box

Objective

Mount the indicator panel box on the unload end of the washer.

Installation

Refer to Figure 2–15. Unload End Indicator Panel Box.

Figure 2–15. Unload End Indicator Panel Box

1. Remove the face plate of the box.
2. Align the mounting holes in the back of the box with the two #10-32 threaded holes at the edge of the unload end door panel.
3. Use #10-32 fasteners to secure the box to the panel.
4. Install the face plate.

The box overhangs the panel to permit the routing of its electrical cable.

Door Proximity Switches

Objective

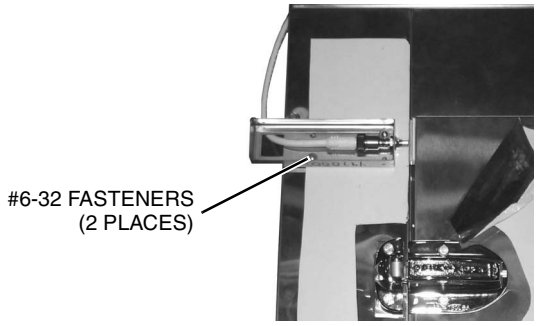
Install a proximity switch assembly on both the load and the unload end door panels.

The sensors are interchangeable.

Installation

Refer to Figure 2–16. Door Proximity Switches.

Figure 2–16. Door Proximity Switches



1. Align the proximity switch with the threaded mounting holes in the door panel.
2. Use two #6-32 fasteners to secure the switch to the door panel.
3. Adjust the switch as necessary to provide 1/16" to 1/8" clearance to the actuator block on the door.
4. Attach the cover plate over the switch with two screws.
5. Repeat steps 1 through 4 to install the other switch assembly on the other door.

Install Components on Top of the Washer

There are a number of components that are installed on the top panels of the washer. Although there is no specific order in which the components should be installed, the list below presents the items in a recommended order. Refer to the following sections.

- “Power Floor Tilt Pulley System” on page 2-25
- “Transformer” on page 2-27
- “Exhaust Assembly” on page 2-28
- “Intake Assembly” on page 2-29

Before installing any component on top of the washer, you must ensure that the door openings are plumb and square. Failure to do so can result in doors that do not open and close correctly, as well as water leaks.

Power Floor Tilt Pulley System

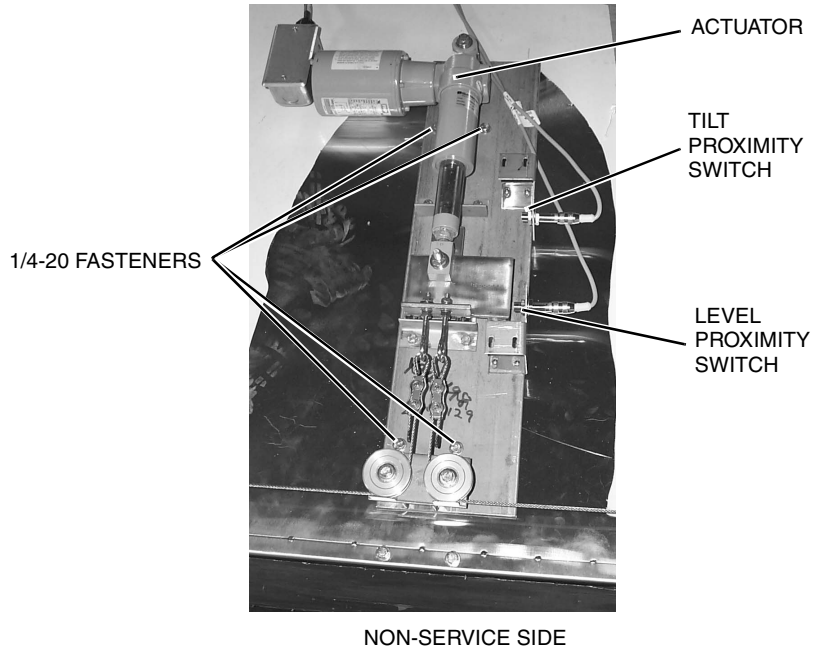
Objective

Install the power tilt floor pulley system. The top panels have 1/4-20 threaded holes to mount the system's three components. The actuator assembly is installed across the middle roof panel with the pulley end along the non-service side of the washer. The pulley cables run from the actuator along the non-service side to the pulley mounts on each end of the washer.

Installation

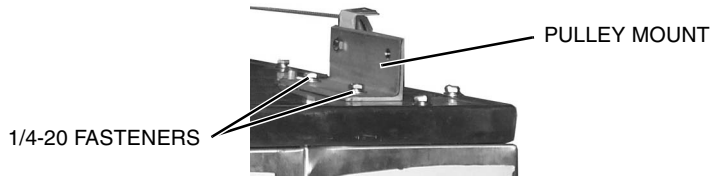
Refer to Figure 2–17. Power Floor Tilt Pulley Assembly for steps 1 through 3.

Figure 2–17. Power Floor Tilt Pulley Assembly



1. Install the following components on the non-service side of the washer's top panels:
   a. Align the actuator with the holes in the top panel and secure with 1/4-20 fasteners (four each 1/2" hex head screws, lock washers, and flat washers). The actuator is mounted near the middle of the washer. The pulleys are oriented so that the cables run the length of the washer on the non-service side.

Figure 2–18. Pulley Mount



b. Secure the load end pulley mount to the corner of the load end top panel with 1/4-20 fasteners (two each 1/2" hex head screws, lock washers, and flat washers).

c. Secure the unload end pulley mount to the corner of the unload end top panel with 1/4-20 fasteners (two each 1/2" hex head screws, lock washers, and flat washers).

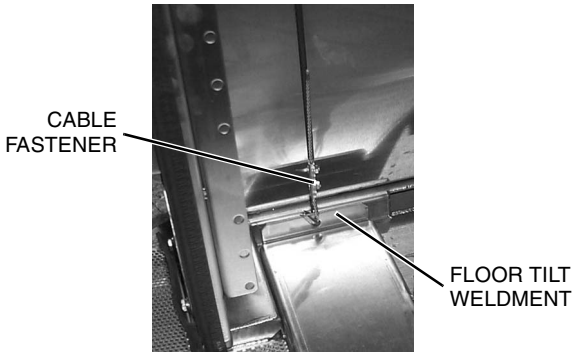
2. Route the pulley cables from the actuator, through the pulley mounts, and then down through the two gasketed cable holes in the paneling to the compartment floor.

NOTE ▶

You may have to enlarge a gasket hole with a drill if the cable does not fit through the hole.

3. Slide the black protective cable sleeves over the sections of the cables inside the washer.

Figure 2–19. Attaching Cable to Floor Lift Weldment



4. Using two cable fasteners each, secure each of the two pulley cables to its corresponding floor tilt weldment.

5. Using #6-32 fasteners, attach the two limit switches to the actuator's mounting plate (refer to 2–17).

Transformer

Objective

If applicable, install the transformer to the top of the washer. The specific transformer used with your washer depends on the house-supplied voltage.

Installation

Refer to Figure 2–20. Transformer.

Figure 2–20. Transformer

LOAD END

NOTE ▶

Transformers are sized differently but are generally located on the service side of the load end top panel.

1. Match the transformer's mounting holes to the threaded holes in the panel.
2. Secure the transformer to the panel with appropriate fasteners.

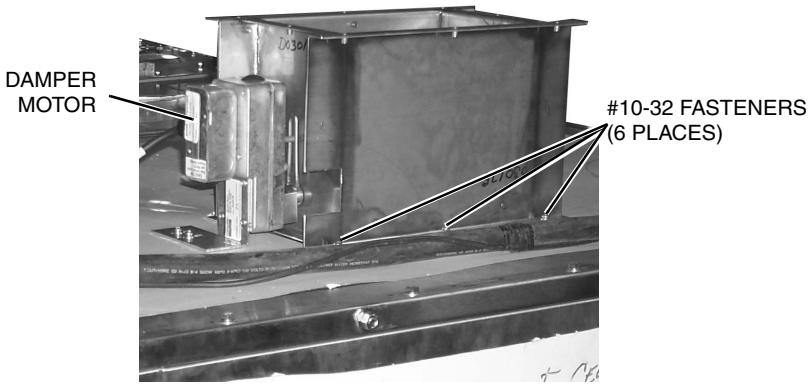
Exhaust Assembly

Objective

Mount the exhaust assembly on the roof panel at the load end of the washer. The exhaust assembly is installed on vented units only.

Installation

Figure 2–21. Exhaust Assembly



WARNING

Silicone primer (orange) is extremely flammable, harmful if swallowed or inhaled, and harmful to eyes or skin. Wear protective clothing, gloves, and eyewear when using this product. Keep it away from heat, sparks, and flames. Store upright in a cool place, less than 30°C (85°F). Keep the container closed when not in use. Use only in a well-ventilated area. Avoid breathing vapors.

CAUTION

Silicone primer stains/discolors clothing, stainless steel surfaces, flooring, etc. Avoid accidental spills. Avoid spreading this substance onto cosmetic surfaces of the washer.

1. Clean all mating surfaces with thinner, treat with silicone primer, and then apply silicone sealant to the mating surface surrounding the cutout on the roof panel.
2. Position the exhaust assembly on the cutout and secure with #10-32 fasteners (six each hex head cap screws, lock washers, and flat washers).
3. Position the damper motor and secure with two #10-32 fasteners.
4. Verify that the damper arm freely engages and operates the exhaust plate.

Intake Assembly

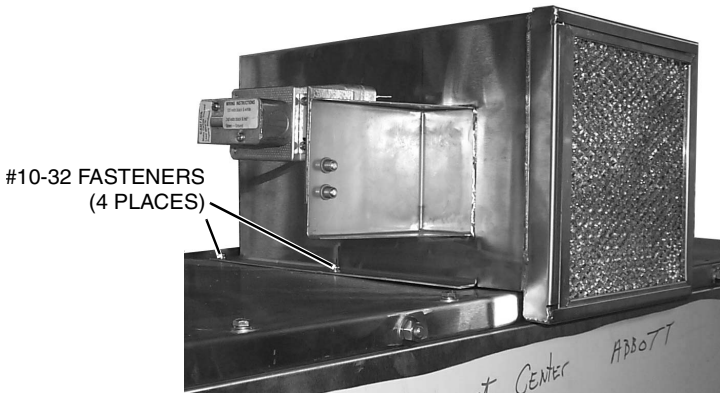
Objective

Mount the intake assembly on the top of the washer above the unload end door.

Installation

Refer to Figure 2–22. Intake Assembly.

Figure 2–22. Intake Assembly



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CAUTION

Silicone primer stains/discolors clothing, stainless steel surfaces, flooring, etc. Avoid accidental spills. Avoid spreading this substance onto cosmetic surfaces of the washer.

1. Clean all mating surfaces with thinner, treat with silicone primer, and then apply silicone sealant to the mating surface surrounding the cutout on the roof panel.
2. Position the intake assembly on the cutout with the filter above the door and secure with #10-32 fasteners (four each hex head cap screws, lock washers, and flat washers).

Plumbing

The washer plumbing is designed with a number of quick-disconnect joints that enable service personnel to isolate problems and to replace components easily. When a washer is disassembled at the factory for shipment to a customer, plumbing sections are removed for efficient packing and quick assembly at the installation site. All plumbing sections are tagged at both ends to indicate what the section is connected to. The following information provides only general descriptions of the completed plumbing.

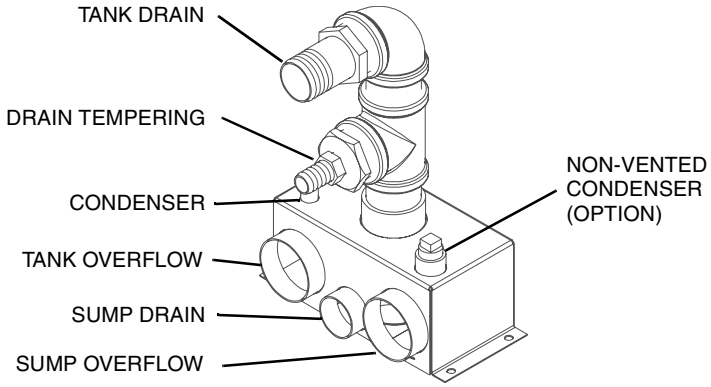
1. Connect the 2" red flex hose from the discharge of the wash pump to the wash manifold fitting on the side of the washer.
2. Connect the 3/4" red flex hose from the output of the booster heater to the rinse manifold on the side of the washer.
3. Attach the red dryer hose to the flange on the intake assembly (on the top of the washer) and to the flange on the dryer condenser. Secure each end with a hose clamp.

NOTE ▶

Secure the dryer hose where necessary to prevent rubbing against sharp edges.

4. Connect the 2" red flex tank fill hose to the discharge of the return pump.
5. Connect the drain box assembly to drain.

Figure 2–23. Drain Box Assembly



Refer to Figure 2–23. Drain Box Assembly for steps 6 through 11 below.

6. Connect the discharge of the tank drain valve to the tank drain fitting on the drain box assembly with 2" red flex hose. Secure at each end with hose clamps.
7. Connect the 3" black flex hose from the overflow fitting on the tank to the tank overflow fitting on the drain box assembly. Secure at both ends with hose clamps.
8. Connect the 2" sump drain valve (with black flex hose) to the drain fitting on the sump and to the sump drain fitting on the drain box assembly. Secure at both ends with hose clamps.
9. Use 3" black flex hose to connect the overflow fitting on the sump with the sump overflow fitting on the drain box assembly. Secure at both ends with hose clamps.
10. Connect the 3/4" red flex hose from the cold water supply to the drain tempering fitting on the drain box assembly. Secure with a hose clamp.
11. Connect the 3/4" clear flex hose from the dryer condenser to the condenser fitting on the drain box assembly. Secure with a hose clamp.
12. If your washer has the non-vented option, connect the 3/4" red flex hose from the exhaust condenser to the other condenser fitting on the drain box assembly. Secure with a hose clamp.

Electrical Wiring

Objective

Make all required electrical wire connections between the electrical components and the control box.

Installation

1. Route all component electrical cables, including thermocouple cables, from the control box to the appropriate electrical component.

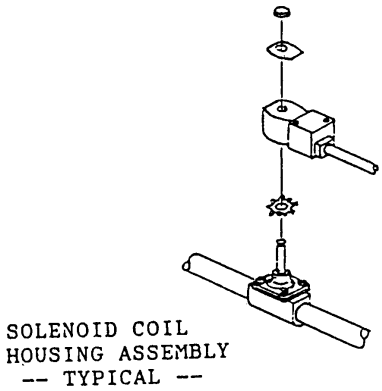
   Refer to Table 2–2 for the routings.

2. Connect the cables to the corresponding electrical component.

Most cables have keyed connectors that plug in and are secured with threaded fittings. Cables that must be wired to the component are noted in Table 2–2.

Attach all solenoid coil housings to their related solenoid valve bodies, as shown in Figure 2–24.

Figure 2–24. Solenoid Valve Assembly



NOTE ▶

The actual configuration for your washer may vary from that shown.

Table 2–2. Control Box Cable Connections

Jack	Cable P/N	Cable Label	Destination
J1-J2	Not used.		
J3	61301604989	P3 – 1PX	Load End Door Proximity Switch 1PX
J4	61301604989	P4 – 2PX	Unload End Door Proximity Switch 2PX
J5-J6	Not used.		
J7	61301603975	P7 – 6PX	Level Proximity Switch 6PX
J8	61301603975	P8 – 7PX	Tilt Proximity Switch 7PX
J9	61301603976	P9 –1MV	Tank Drain Valve 1MV
J10	61301603981	P10 – 9MTR	Exhaust Damper Motor 9MTR
J11	61301603981	P11 – 8MTR	Dryer Damper Motor 8MTR
J12	Not used.		
J13	Y960456	P13 – 3SV	Tank Fill Solenoid Valve 3SV
J14	Y960456	P14 – 4SV	Tank Steam Solenoid Valve 4SV
J15	Y960456	P15 – 5SV	Rinse Steam Solenoid Valve 5SV
J16	Y960456	P16 – 1SV	Dryer Steam Solenoid Valve 1SV
J17	Not used.		
J18	Y960456	P18 – 2SV	Dryer Condenser Cold Water Solenoid Valve 2SV
J19	Not used.		
J20	Y960456	P20 – 6SV	Exhaust Duct Cold Water Solenoid Valve 6SV (Non-vented units only)
J21		P21 – 14SV	Drain Tempering Solenoid Valve (HI) 14SV
J22	61301603980	P22 – 1LT/2LT	Unload End Indicator Box
J23	61301603988	P23 – 12MTR	Detergent Pump 12MTR
J24	61301603978	P24 – 13MTR	Rinse Aid Pump 13MTR
J25	61301604985	P25 – 1LE/2LE/ 3LE	Circulation Tank High, Low, and Refresh Water Level Probes 1LE/2LE/3LE
J26	61301603983	P26 – 1ACT	Floor Tilt Actuator 1ACT
J27	61301603984	P27 – 3LT	Washer Compartment Light 3LT
J28–J30	Not used.		
J31	61301603985	P31 – 1TC	Circulation Tank Thermocouple 1TC
J32	61301603985	P32 – 2TC	Dryer Thermocouple 2TC
J33	Not used.		
J34	61301603985	P34 – 4TC	Rinse Water Thermocouple 4TC
J35	61301604988	P35 – 3JB	Float Switch Junction Box 3JB

Jack	Cable P/N	Cable Label	Destination
J36	61301604134	P36 – 1MTR	Wash Pump 1MTR
J37	61301603987	P37 – 2MTR	Dryer Blower Motor 2MTR
J38	Not used.		
J39	61301603988	P39 – 4MTR	Manifold Drive Motor 4MTR
J40		P40 – T	Transformer T
J41–J49	Not used.		
J50	61301603976	P50 – 2MV	Sump Drain Valve 2MV
J51	B010359	P51 – 15MTR	Rinse Pump 15MTR
J52	Not used.		
J53	61301604987	P53 – 3S	Emergency Stop Switch 3S
J54	Not used.		
J55	Y960456	P55 – 11SV	Rinse Water Solenoid Valve 11SV
J56–J57	Not used.		
J58		P58 – 14MTR	Return Pump 14MTR
J59	Y960789	P59 – 5PX	Manifold Drive Motor Proximity Switch 5PX
J60–J61	Not used.		
J62		P62 – 13SV	Pure Rinse Water Solenoid Valve 13SV
J63		P63 – 5MTR	Exhaust Blower 5MTR
J64		P64 – 10SV	Drain Tempering Solenoid Valve (LO) 10SV

Install Components on the Inside of the Washer

This section provides instructions for installing equipment on the inside of the washer. The procedures are presented in a recommended order. Refer to the following sections.

- "Drive Chain Tension Idlers and Idler Bearing" on page 2-35
- "Chain Drive Assembly" on page 2-36
- "Spray Manifold Supports and Spray Manifolds" on page 2-38
- "Manifold Cover, Manifold Guard Tubes, Wash Cart Tubes" on page 2-41
- "Emergency Stop Switch Cable" on page 2-43

Drive Chain Tension Idlers and Idler Bearing

Objective

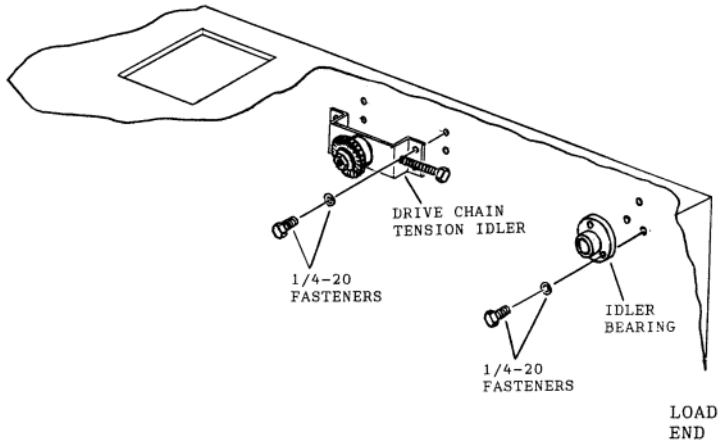
Install the following components inside the washer compartment:

- Two drive chain tension idlers
- Idler bearing

Installation

Refer to Figure 2–25. Drive Chain Tension Idlers and Idler Bearings.

Figure 2–25. Drive Chain Tension Idlers and Idler Bearings



1. Mount the two drive chain tension idlers, one on either side of the compartment, with 1/4-20 fasteners (four each 3/4" hex head cap screws and lock washers).
2. Mount the idler bearing for the manifold drive shaft as shown. Secure with 1/4-20 fasteners (three each 1" hex head cap screws, lock nuts, lock washers, and flat washers).

Chain Drive Assembly

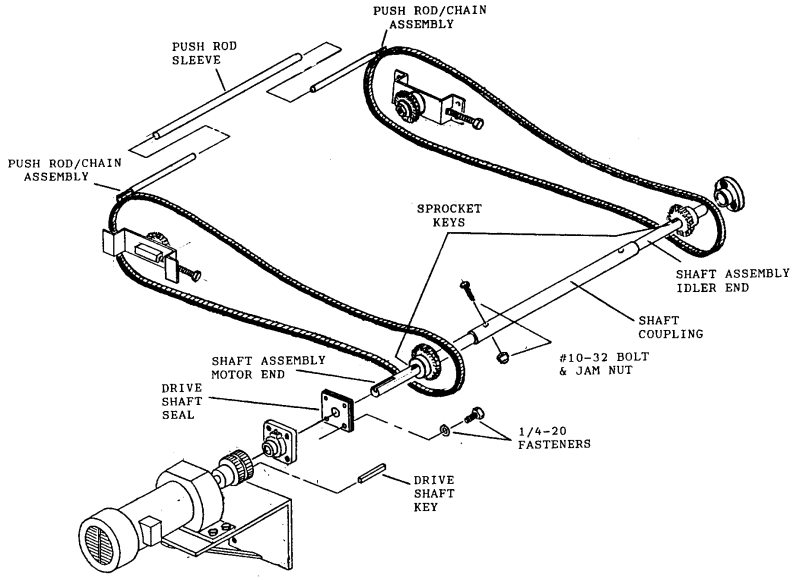
Objective

Install the drive shaft, drive chains, and push rod that comprise the chain drive assembly.

Installation

Refer to Figure 2–26. Chain Drive Assembly.

Figure 2–26. Chain Drive Assembly



1. Insert the drive shaft key into the keyway in the spray manifold drive motor that you installed previously.
2. Mount the drive shaft seal to the inside of the upper corner of the load end side panel, opposite the flange bearing that you installed previously.
   a. Position the seal so its rubber side is against the panel.
   b. Secure in place with 1/4-20 fasteners (four each 3/8" pan head screws and lock washers).
3. Insert, but do not fasten, the motor and idler ends of the shaft assembly into the shaft coupling.
4. Hang the two push rod/chain assemblies from the shaft assembly.
5. Fit the idler end into the idler bearing that you installed previously.
6. Extend the motor end through the seal and flange bearing, and then engage the key (installed in step 1) with the shaft's keyway.

7. Rotate the idler end of the shaft until its sprocket key is in alignment with the sprocket key at the shaft's motor end.
8. Secure the shaft ends to the shaft coupling with two #10-32 bolts and jam nuts.
9. Adjust the proximity switch so that the gap between the switch and the sensing collar on the drive shaft is less than or equal to 2 mm (0.08").
10. Use #10-32 fasteners (four each 1/4" pan head screws and lock washers) to attach the drive coupling guard to the motor's mounting fixture.

NOTE

You can wait until the operation of the motor has been checked by product support personnel before installing the drive coupling guard.

11. Insert the ends of the push rod chain assembly into the push rod sleeve.
12. Fit the chains onto their related sprockets at the drive shaft and at the drive chain tension idlers that you installed previously.
    Make sure the ends of the push rod are seated on matching sprocket teeth.
13. Adjust the chain tension so there is no more than 1" of play in either line.
    You can loosen a tension idler's 3/8-16 bolt to permit movement of its sprocket. Turning the 1/4-20 adjustment bolt repositions the sprocket, thereby increasing or decreasing chain tension.

Spray Manifold Supports and Spray Manifolds

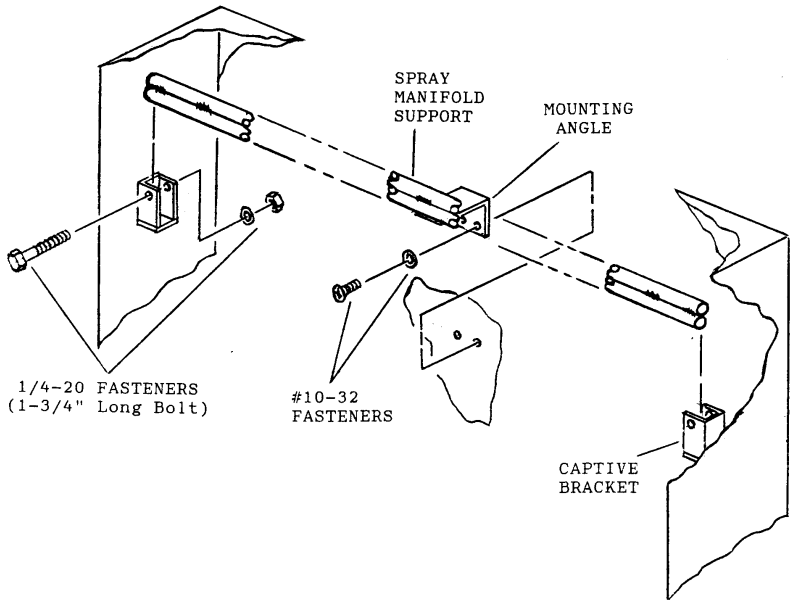
Objective

Install the two spray manifold supports, one on either side of the washer compartment, and then install the two spray manifolds.

Installation

Refer to Figure 2–27. Spray Manifold Support.

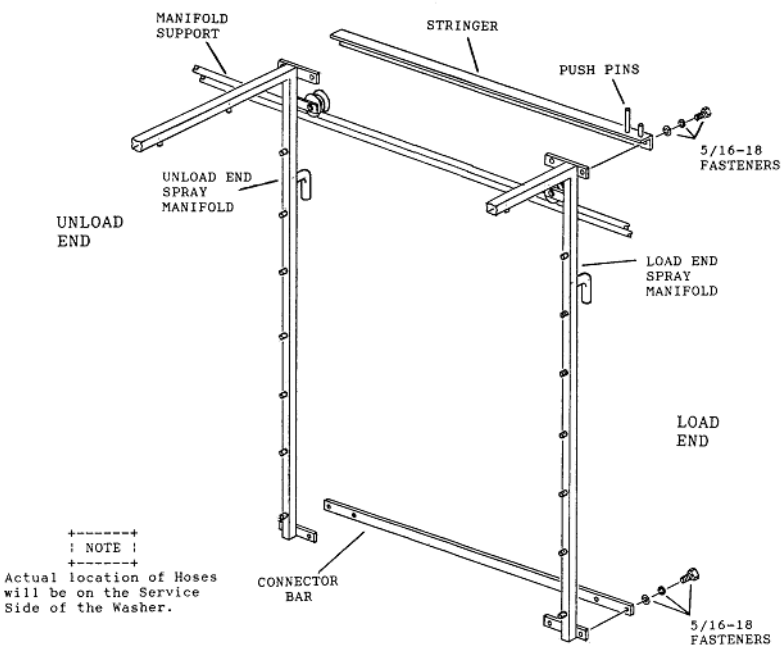
Figure 2–27. Spray Manifold Support



1. Seat the ends of the spray manifold supports in the uppermost captive brackets that are welded to the inside of the two door panels.
2. Apply silicone sealant to four #10-32 fasteners, and then secure the mounting angles of the supports to the side panels.

3. Attach 1/4-20 bolts and nylock nuts to the captive brackets to ensure the ends of the spray manifold supports remain in place.

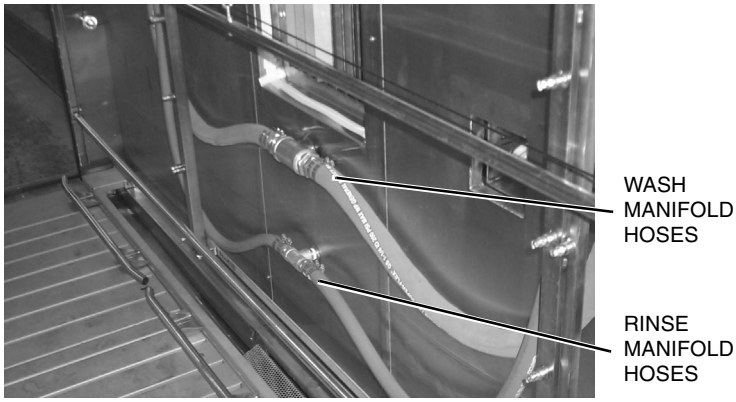
Figure 2–28. Spray Manifold Assembly



4. Attach the rinse and the wash hose connectors to the inlet ports in the middle side panel.
5. Set the spray manifolds on the manifold supports.
6. Connect the manifolds at the top with two stringers. Orient the stringers so that their push pins are directed toward the load end. Use 5/16-18 fasteners to secure the stringers to the manifolds.

7. Use 5/16-18 fasteners to connect the manifolds at the bottom with two connector bars. Use two sets of fasteners at the end of each connector bar.

Figure 2–29. Wash and Rinse Manifold Hoses



8. Install the wash and rinse hoses between the manifold and the panel hose connectors. Secure each end of the hoses with two hose clamps. Position the hoses so they rest against the panels and not obstruct manifold movement.

Manifold Cover, Manifold Guard Tubes, Wash Cart Tubes

Objective

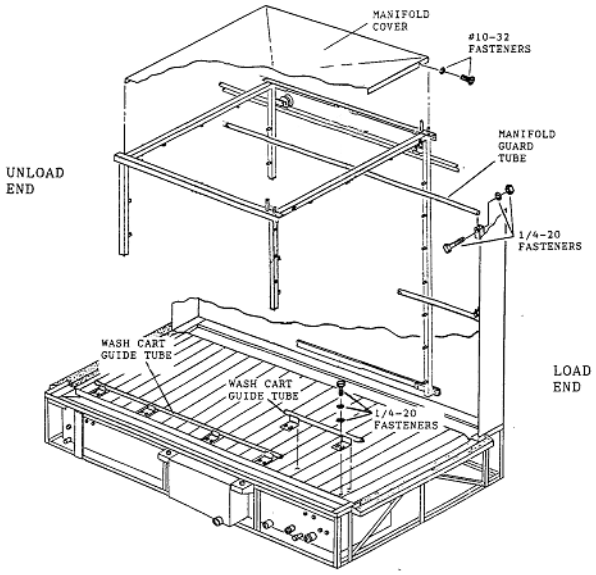
Install the following components inside the washer:

- Manifold cover
- Four manifold guard tubes
- Two wash cart guide tubes

Installation

Refer to Figure 2–30. Manifold Cover, Manifold Guard Tubes, Wash Cart Guide Tubes.

Figure 2–30. Manifold Cover, Manifold Guard Tubes, Wash Cart Guide Tubes



1. Position the manifold cover on top of the spray manifolds. Secure the cover in place at the load and unload ends with four #10-32 fasteners (two at each end of the cover).

2. Attach the four manifold guard tubes to the captive brackets welded to the load and unload end door panels.
   a. Place a 1/4-20 bolt through the manifold guard tube brackets on each end of the washer at the appropriate level and secure with a lock nut.
   b. Insert each end of the manifold guard tube so that it rests on the bolt inside the bracket.

NOTES

- *There is one manifold guard tube that has three eyebolts to accommodate the emergency stop cable. This tube should be installed as the middle of the three tubes that are installed on the service side of the washer. This tube is also secured to the bracket through holes in the tube, rather than by resting on the bolt.*
- *You should position the guard tubes to accommodate the equipment to be washed.*

3. Install the wash cart guide tubes.

NOTE

There are two or three guide tubes depending on the length of the washer: the 78003 has two guide tubes; the 78004 and 78005 have three guide tubes (the shorter guide tube is installed between the other two).

   a. Center one of the long wash cart guide tubes on the load end floor grate.
   b. Butt the edges of the tube's mounting brackets against the floor frame over the sump.
   c. Using the brackets as templates, drill and tap four 1/4-20 holes into the grate. Make sure the holes are located against the inside of the bracket slots so the tube can to be adjusted back toward the center line of the floor.
   d. Repeat steps a through c for the remaining wash cart guide tube.
   e. Secure both tubes to the floor with 1/4-20 fasteners.

Emergency Stop Switch Cable

Objective

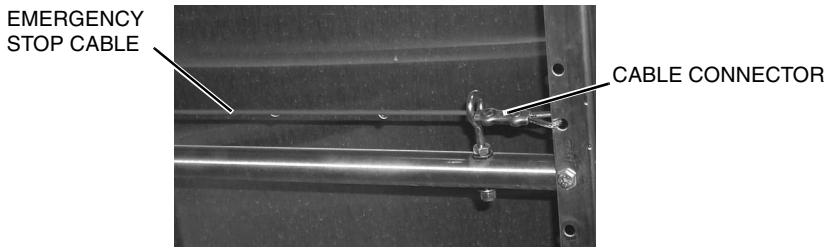
Install the emergency stop cable. The cable runs along the service side of the washer, passes through the side panel, and connects to the emergency stop switch on the service side of the washer.

Installation

Install the emergency stop cable on the front side of the washer and connect to the switch on the outside of the washer.

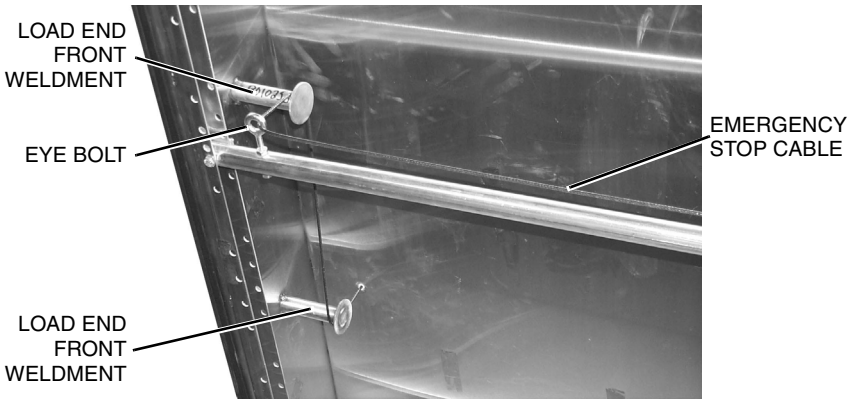
1. Refer to Figure 2–31. At the unload end of the washer, attach one end of the cable to the guide rail bracket. Loop the cable through the next hole in the bracket above the guide rail and secure with a cable fastener.

Figure 2–31. Emergency Cable Connection



2. As shown in Figure 2–32, feed the cable through the three eyebolts on the guide rail to the load end, around the two weldments on the front side panel, and through the opening in the front side panel.

Figure 2–32. Emergency Stop Cable



3. Secure the end of the cable to the emergency stop switch assembly with a cable fastener as shown in Figure 2–14.

Final Installation Tasks

This section provides instructions for completing the installation of the washer. Refer to the following sections.

- “Final Door Assembly” on page 2-45
- “Dispenser Tubing” on page 2-46
- “Barrier Flanges” on page 2-48
- “Pit Covers” on page 2-49
- “Service Area Enclosure (Option)” on page 2-50
- “Ramps” on page 2-51
- “Exhaust Connection” on page 2-52
- “Plumbing System Connections” on page 2-52
- “Electrical Supply Connection” on page 2-52
- “Concluding Tasks” on page 2-53

Final Door Assembly

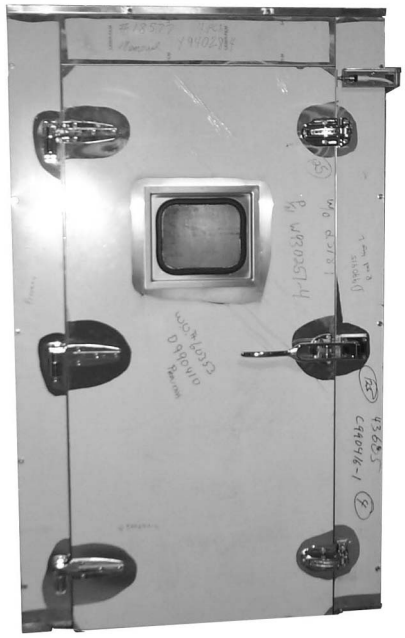
Objective

Hang the load and unload doors back on their hinges.

Installation

Refer to Figure 2–33. Door Assembly.

Figure 2–33. Door Assembly



A washer door is heavy and awkward to handle. Take care to avoid crushing or strain injuries.

1. Raise and maneuver the door until its hinge posts are in vertical alignment over the three hinge mounts attached to the door panel.
2. When aligned, lower the door and properly seat all three posts in their respective mounts.

Repeat steps 1 and 2 for the other door assembly.

Dispenser Tubing

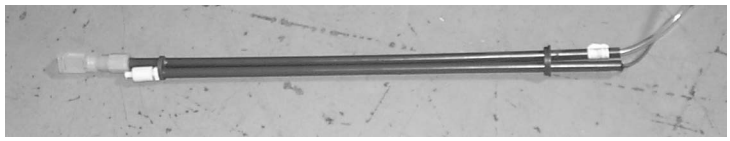
Objective

Connect the detergent and rinse aid dispenser pump tubing.

Installation

1. Connect the detergent tubing.
   a. Place the detergent float switch assembly (see Figure 2–34) in the detergent supply container.

Figure 2–34. Detergent/Rinse Aid Float Switch



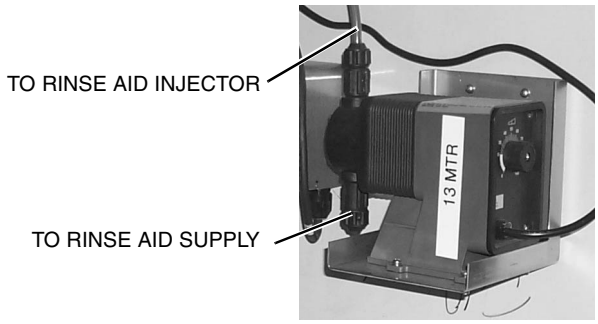
   b. Connect the supply tubing from the detergent float switch to the left side of the detergent pump (Figure 2–35).

Figure 2–35. Detergent Pump

   c. Connect the DETERGENT connector from the float switch to the DETERGENT connector from the cable connected to the float switch junction box.
   d. Connect the discharge tubing to the right side of the detergent pump.
   e. Connect the plastic compression fitting on the other end of the tubing to the fitting on the tank.

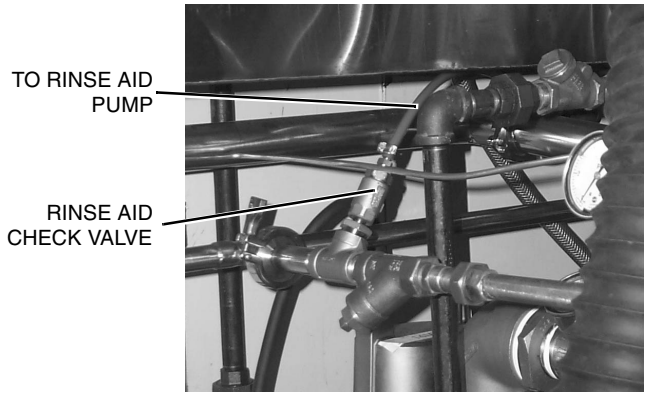
2. Connect the rinse aid tubing.
   a. Place the rinse aid float switch assembly in the rinse aid supply container.
   b. Connect the supply tubing from the float switch assembly to the bottom plastic compression fitting on the rinse aid pump (Figure 2–36).

Figure 2–36. Rinse Aid Pump



   c. Connect the RINSE AID connector from the float switch to the RINSE AID connector from the cable connected to the float switch junction box.
   d. Connect the discharge tubing to the top fitting on the rinse aid pump using plastic compression fitting.
   e. Slide the other end of the tubing over the barbed fitting between the output of the booster heater and the stainless steel piping to the rinse manifold.

Figure 2–37. Rinse Aid Injector Fitting



Barrier Flanges

Objective

Attach the barrier flanges to the load and unload ends of the washer.

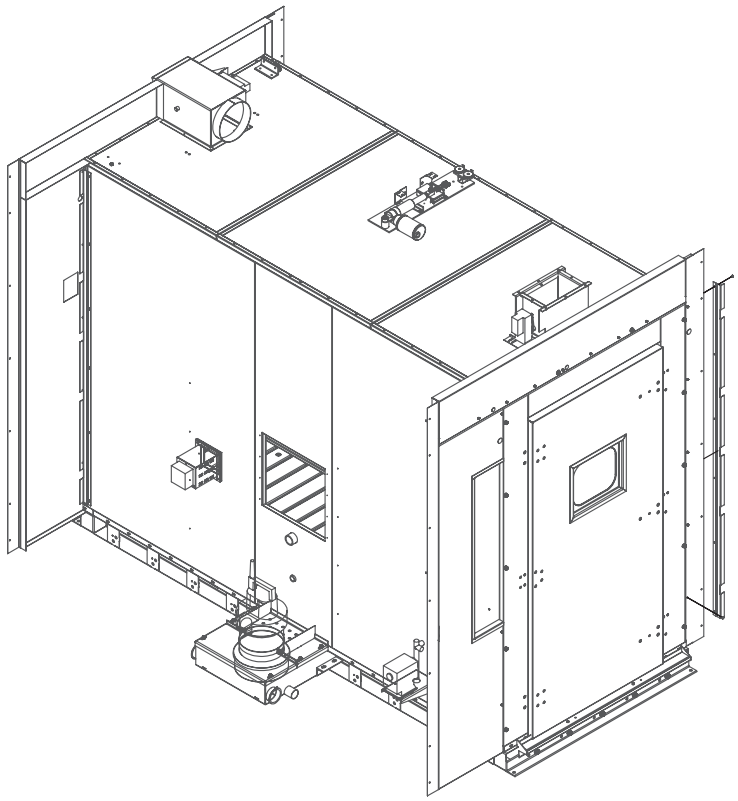
The following instructions apply to units with structural walls situated at both the load and unload ends. Units with only one wall (generally at the unload end) receive a service area enclosure and an unload end top barrier flange. For the latter configuration, refer to “Service Area Enclosure (Option)” on page 2-50.

NOTE ▶

The method and materials for securing the barrier flanges to a structural wall are to be provided by the customer.

Installation

Figure 2–38. Barrier Flanges



1. Using #10-32 fasteners, attach the two short attachment angles to the load end side panel and the single long attachment angle to the unload end side panel. Position the proximity switch and unload end indicator panel cables so they will route through the cutouts provided in the angles.

2. Secure the load and unload end side barrier flanges to the attachment angles with #10-32 fasteners.
   The interior edge of a flange seats between an angle and the side panel.
3. Attach the top barrier flanges.
   a. Remove and retain the acorn nut fasteners from the two top thru bolts.
   b. Attach the load and unload end top barrier flanges.
   c. Use the acorn nuts along with #10-32 fasteners to secure the flanges to the top panels and to the side barrier flanges.
4. For vented units only, attach the intake frame assembly to the unload end top barrier flange.

Pit Covers

Objective

Install the pit covers at the load and unload ends of a pit mounted washer.

Installation

1. Place the pit cover in position against the washer.
2. Using the mounting holes in the cover flanges as a template, drill and tap #10-32 holes into the washer base.
3. Secure the pit cover to the washer base with #10-32 fasteners.
4. Repeat steps 1 through 3 for the other cover.

Service Area Enclosure (Option)

Objective

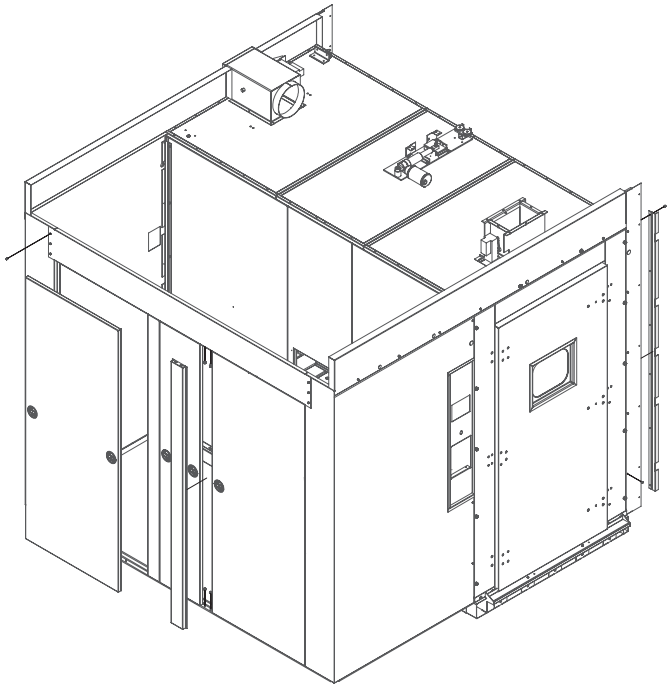
Assemble the service area enclosure.

The service area enclosure is usually installed on units that do not have a structural wall at either the load or unload end.

Installation

Refer to Figure 2–39. Service Area Enclosure.

Figure 2–39. Service Area Enclosure



1. Attach the two short attachment angles to the load end side panel and the single long attachment angle to the unload end side panel with #10-32 fasteners. Position the proximity switch and unload end indicator panel cables so they will route through the cutouts provided in the angles.
2. Use four 1/4-20 fasteners to attach the mounting base frame to the base frame of the washer.
3. Secure the load and unload end side panels to the attachment angles. The interior edge of a panel seats between an angle and the washer's side panel. Use #10-32 fasteners to secure the base of the each panel to the mounting base frame.

4. Position the access panel divider on the mounting base frame. The upper end of the divider has two #10-32 threaded holes and the lower end has two 1/4" diameter holes. Secure the bottom of the divider to the frame with two #10-32 fasteners.
5. Secure the top panel to the load and unload end side panels. Use #10-32 fasteners to secure it to the top of the access panel divider.
6. Install the service access panels.
   a. Fit the holes in the bottom of a panel to the panel mounting studs on the mounting base frame.
   b. Turn the latches 90 degrees to secure the service access panel in place.
7. Attach the load and unload end top barrier flanges.

Ramps

Objective

Install the ramps at the load and unload ends of a floor mounted washer.

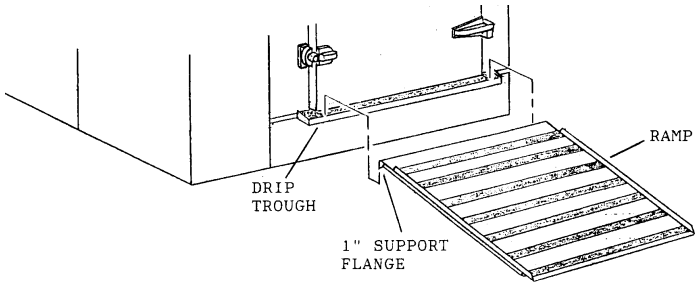
NOTE ▶

This procedure applies only to floor mounted washers.

Installation

Refer to Figure 2–40. Ramp.

Figure 2–40. Ramp



Insert the 1" support flange of the ramp behind the front edge of the drip trough that extends from the door threshold. No fasteners are required.

Exhaust Connection

This procedure applies only to vented washers. Install a dedicated, corrosion-proof, watertight duct (800 CFM, negative 1/4" static pressure) from the 6 1/2" x 10" flanged exhaust assembly (Figure 2–21 on page 2–28) to the building's exhaust system. The duct assembly should be sloped toward the washer.

Plumbing System Connections

All service connections must conform to local codes. The supply line connections are labeled for identification. Refer to "Utilities and Specifications" on page 1-2 for pipe sizes, pressures, and requirements at site of installation.

1. Connect the 1-inch hot water supply line to the 3/4-inch service connection.
2. Connect the 3/4-inch cold water supply line to the 3/4-inch service connection.
3. Connect the 1-1/2 inch steam supply line to the 1-1/2 inch service connection.
4. Connect the 3/4-inch steam return or drain line to the 3/4-inch condensate line connection.
5. If the washer has the purified rinse option, connect the 3/4-inch purified water supply line to the 3/4-inch service connection.

Electrical Supply Connection

The customer must install a fused disconnect in the electrical supply line. It should be situated close to the unit for easy access by service personnel.

1. Route the electrical supply line through the top of the control box to the power distribution block.
2. Connect the electrical supply line. Refer to "Utilities and Specifications" on page 1-2.

Concluding Tasks

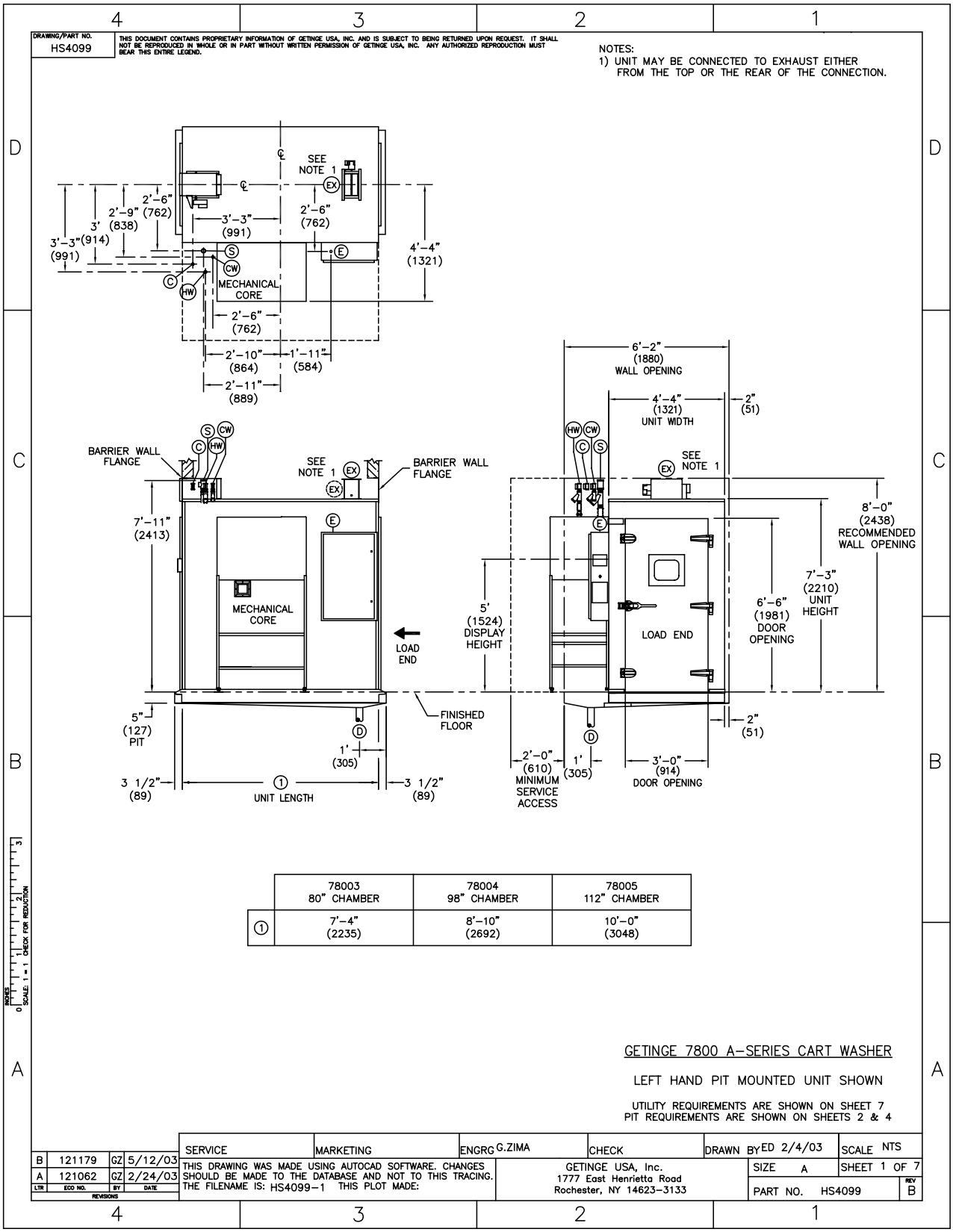
1. Apply silicone sealant to all permanent exterior seams.
2. Remove the protective film from all exterior surfaces of the washer.
3. Clean and polish the exterior surfaces of the washer.
4. Remove the cardboard protective flooring from inside the washer.
5. Perform the steps in the Installation Checkout Procedure included with your washer. Complete the SCR and return both to Getinge USA service headquarters.

At this point, installation is complete. You must contact Getinge USA personnel to make mechanical adjustments and electrical performance tests before the equipment is operated. Failure to do so before operation voids the warranty.

Section 3 Rough-In Drawings

Rough-in drawings for the pit mounted and floor mounted versions of the 7800A washer are included in the following pages.

Figure 3–1. 7800A Washer (HS4099, sheet 1 of 7)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NOTES:
1) UNIT MAY BE CONNECTED TO EXHAUST EITHER FROM THE TOP OR THE REAR OF THE CONNECTION.
SEE NOTE 1
2'-6" (762)
2'-9" (762)
3' (838)
3'-3" (991)
3'-3"(914) (991)
4'-4" (1321)
MECHANICAL CORE
2'-10" (864)
1'-11" (584)
2'-11" (889)
6'-2" (1880) WALL OPENING
4'-4" (1321) UNIT WIDTH
2" (51)
BARRIER WALL FLANGE
7'-11" (2413)
LOAD END
5' (1524) DISPLAY HEIGHT
6'-6" (1981) DOOR OPENING
7'-3" (2210) UNIT HEIGHT
8'-0" (2438) RECOMMENDED WALL OPENING
FINISHED FLOOR
5" (127) PIT
1' (305)
3 1/2" (89)
UNIT LENGTH
2'-0" (610) MINIMUM SERVICE ACCESS
3'-0" (914) DOOR OPENING
78003 80" CHAMBER
78004 98" CHAMBER
78005 112" CHAMBER
7'-4" (2235)
8'-10" (2692)
10'-0" (3048)
GETINGE 7800 A-SERIES CART WASHER
LEFT HAND PIT MOUNTED UNIT SHOWN
UTILITY REQUIREMENTS ARE SHOWN ON SHEET 7
PIT REQUIREMENTS ARE SHOWN ON SHEETS 2 & 4
SERVICE MARKETING ENGRG G.ZIMA CHECK DRAWN BY ED 2/4/03 SCALE NTS
B 121179 GZ 5/12/03
A 121062 GZ 2/24/03
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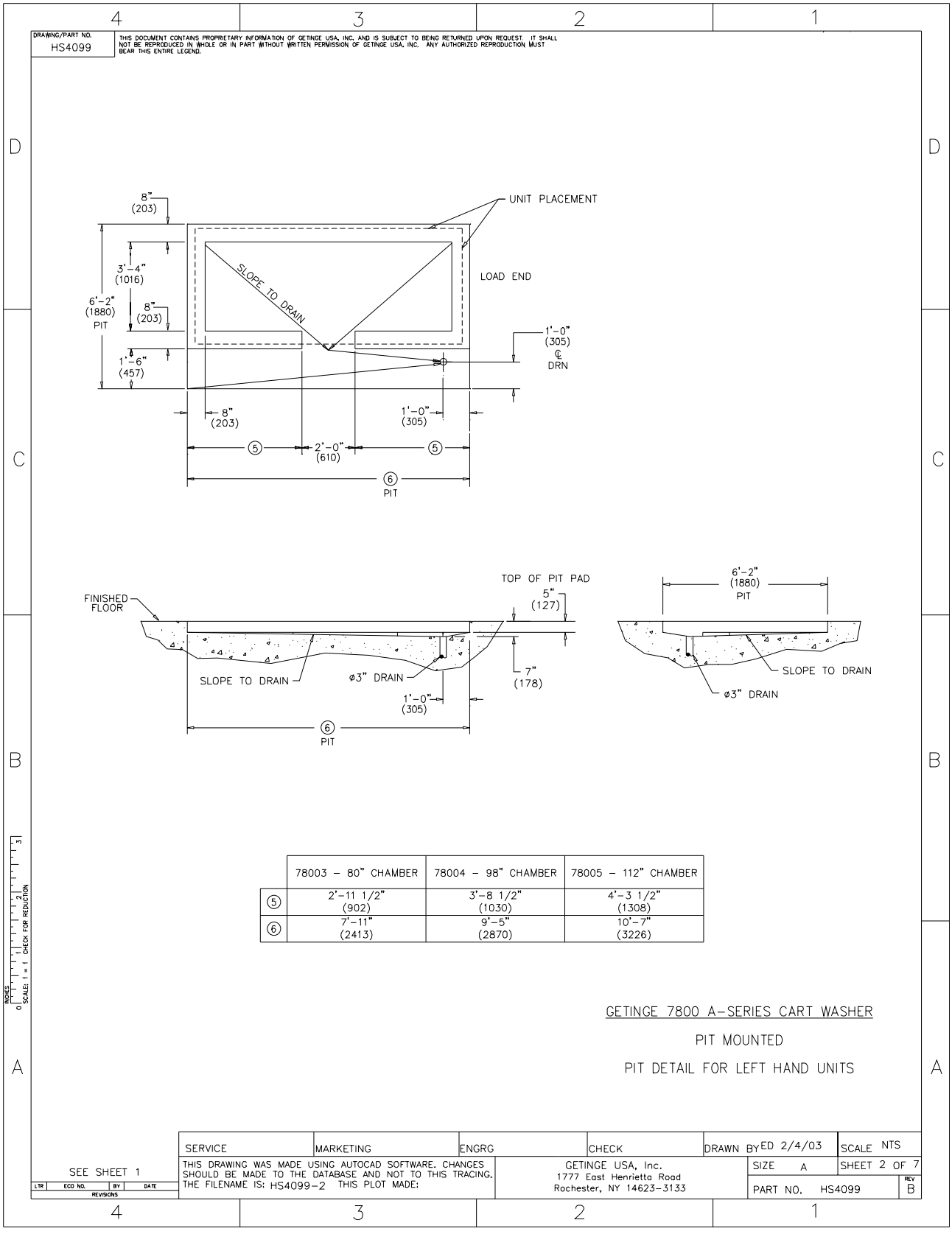
Figure 3–1. 7800A Washer (HS4099, sheet 2 of 7)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8" (203)
3'-4" (1016)
6'-2" (1880) PIT
8" (203)
1'-6" (457)
SLOPE TO DRAIN
UNIT PLACEMENT
LOAD END
1'-0" (305) ℄ DRN
8" (203)
1'-0" (305)
2'-0" (610)
⑤
⑥ PIT
FINISHED FLOOR
TOP OF PIT PAD
5" (127)
SLOPE TO DRAIN
ø3" DRAIN
7" (178)
1'-0" (305)
⑥ PIT
6'-2" (1880) PIT
SLOPE TO DRAIN
ø3" DRAIN
SCALE: 1 = 1 CHECK FOR REDUCTION
INCHES
GETINGE 7800 A-SERIES CART WASHER
PIT MOUNTED
PIT DETAIL FOR LEFT HAND UNITS
SEE SHEET 1
LTR ECO NO. BY DATE
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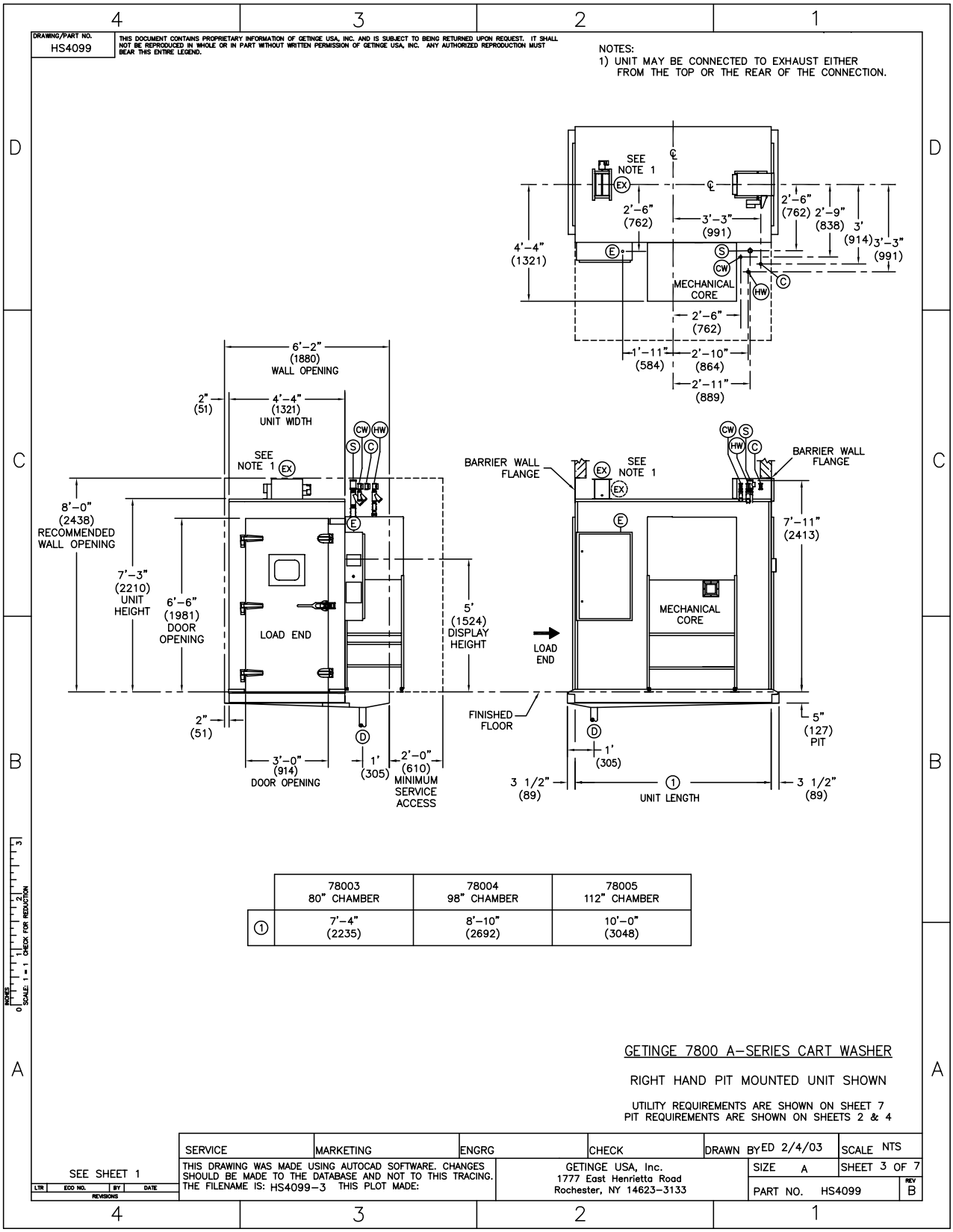
PART NO. HS4099
REV B

	78003 – 80" CHAMBER	78004 – 98" CHAMBER	78005 – 112" CHAMBER
⑤	2'-11 1/2" (902)	3'-8 1/2" (1030)	4'-3 1/2" (1308)
⑥	7'-11" (2413)	9'-5" (2870)	10'-7" (3226)

Figure 3–1. 7800A Washer (HS4099, sheet 3 of 7)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NOTES:
1) UNIT MAY BE CONNECTED TO EXHAUST EITHER FROM THE TOP OR THE REAR OF THE CONNECTION.
SEE NOTE 1
2'–6" (762)
3'–3" (991)
2'–6" (762)
2'–9" (838)
3' (914)
3'–3" (991)
4'–4" (1321)
MECHANICAL CORE
2'–6" (762)
1'–11" (584)
2'–10" (864)
2'–11" (889)
6'–2" (1880) WALL OPENING
2" (51)
4'–4" (1321) UNIT WIDTH
8'–0" (2438) RECOMMENDED WALL OPENING
7'–3" (2210) UNIT HEIGHT
6'–6" (1981) DOOR OPENING
LOAD END
5' (1524) DISPLAY HEIGHT
2" (51)
3'–0" (914) DOOR OPENING
1' (305)
2'–0" (610) MINIMUM SERVICE ACCESS
BARRIER WALL FLANGE
7'–11" (2413)
LOAD END
FINISHED FLOOR
5" (127) PIT
1' (305)
3 1/2" (89)
UNIT LENGTH
3 1/2" (89)
78003 80" CHAMBER
78004 98" CHAMBER
78005 112" CHAMBER
① 7'–4" (2235) 8'–10" (2692) 10'–0" (3048)
GETINGE 7800 A–SERIES CART WASHER
RIGHT HAND PIT MOUNTED UNIT SHOWN
UTILITY REQUIREMENTS ARE SHOWN ON SHEET 7
PIT REQUIREMENTS ARE SHOWN ON SHEETS 2 & 4
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PART NO. HS4099 REV B
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SCALE: 1 = 1 CHECK FOR REDUCTION

Figure 3–1. 7800A Washer (HS4099, sheet 4 of 7)

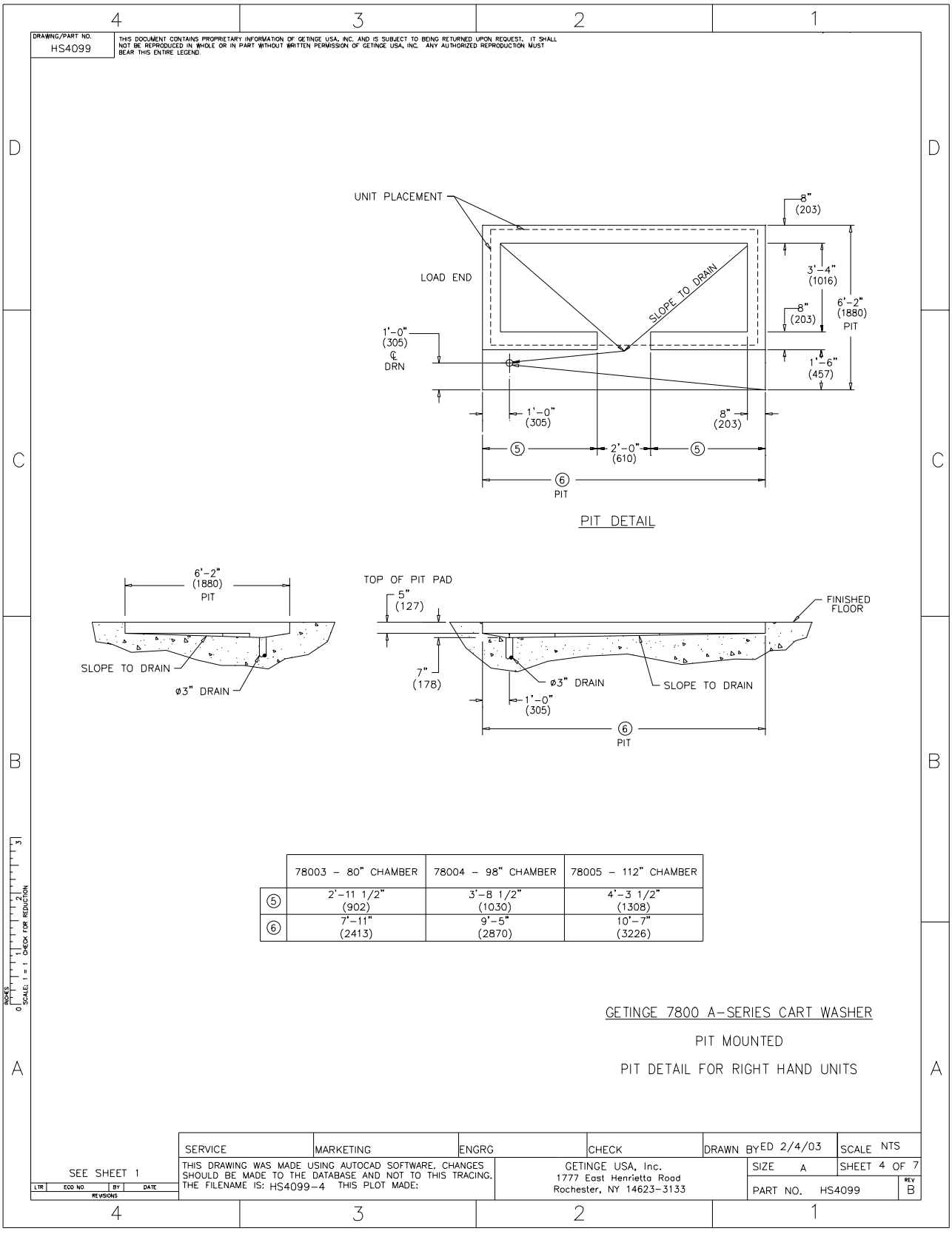

DRAWING/PART NO.
HS4099
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF GETINGE USA, INC. AND IS SUBJECT TO BEING RETURNED UPON REQUEST. IT SHALL NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT WRITTEN PERMISSION OF GETINGE USA, INC. ANY AUTHORIZED REPRODUCTION MUST BEAR THIS ENTIRE LEGEND.
UNIT PLACEMENT
LOAD END
SLOPE TO DRAIN
1'-0" (305) ℄ DRN
8" (203)
3'-4" (1016)
6'-2" (1880) PIT
1'-6" (457)
1'-0" (305)
8" (203)
2'-0" (610)
⑤
⑥
PIT
PIT DETAIL
6'-2" (1880) PIT
SLOPE TO DRAIN
ø3" DRAIN
TOP OF PIT PAD
5" (127)
FINISHED FLOOR
7" (178)
ø3" DRAIN
SLOPE TO DRAIN
1'-0" (305)
⑥
PIT
78003 – 80" CHAMBER
78004 – 98" CHAMBER
78005 – 112" CHAMBER
⑤ 2'-11 1/2" (902) | 3'-8 1/2" (1030) | 4'-3 1/2" (1308)
⑥ 7'-11" (2413) | 9'-5" (2870) | 10'-7" (3226)
NOTES: 0 SCALE: 1 = 1 CHECK FOR REDUCTION
GETINGE 7800 A-SERIES CART WASHER
PIT MOUNTED
PIT DETAIL FOR RIGHT HAND UNITS
SEE SHEET 1
LTR ECO NO. BY DATE REVISIONS
SERVICE MARKETING ENGRG CHECK DRAWN BY ED 2/4/03 SCALE NTS
THIS DRAWING WAS MADE USING AUTOCAD SOFTWARE. CHANGES SHOULD BE MADE TO THE DATABASE AND NOT TO THIS TRACING. THE FILENAME IS: HS4099-4 THIS PLOT MADE:
GETINGE USA, Inc.
1777 East Henrietta Road
Rochester, NY 14623-3133
SIZE A SHEET 4 OF 7
PART NO. HS4099 REV B

Figure 3–1. 7800A Washer (HS4099, sheet 5 of 7)

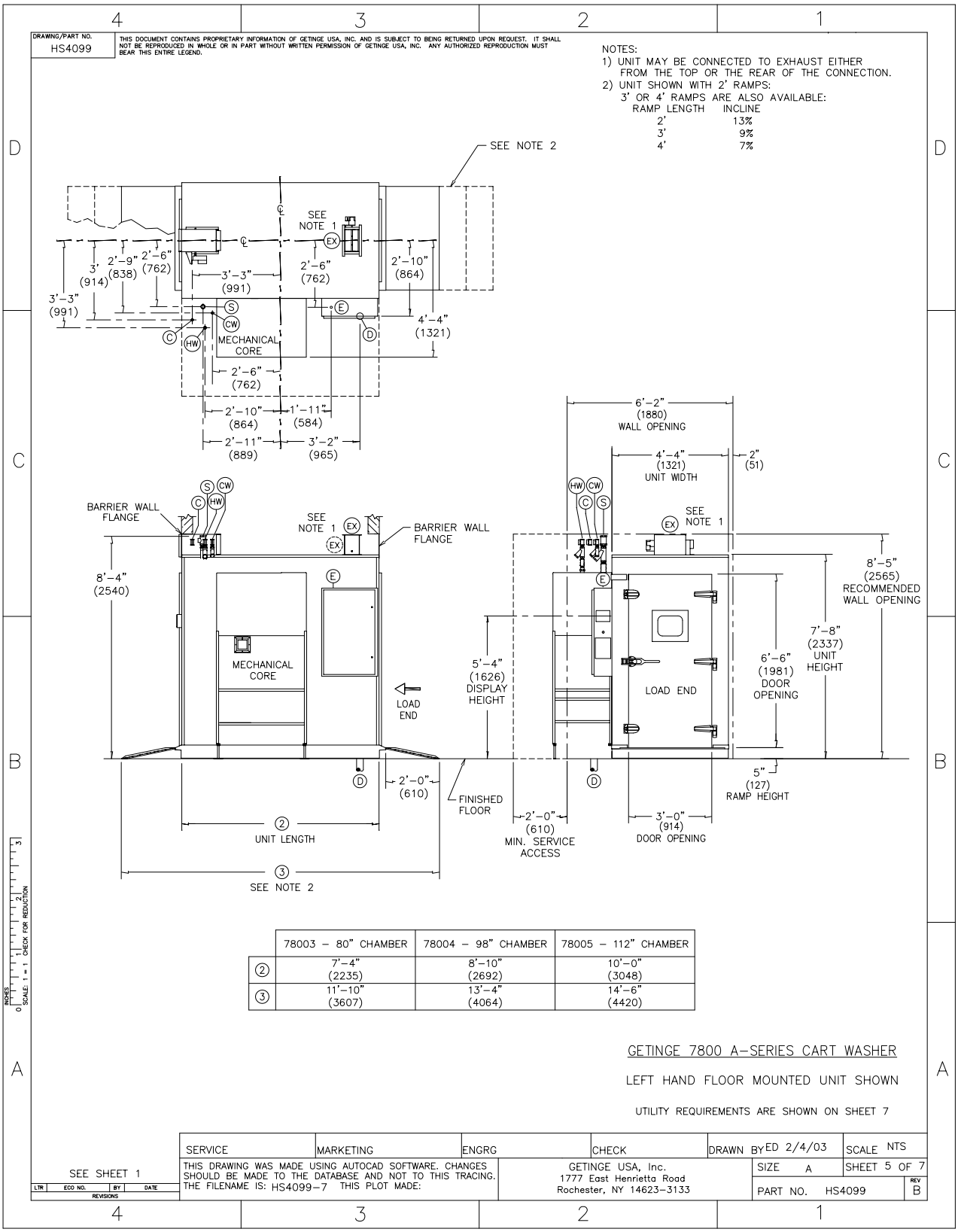

DRAWING/PART NO. HS4099
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF GETINGE USA, INC. AND IS SUBJECT TO BEING RETURNED UPON REQUEST. IT SHALL NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT WRITTEN PERMISSION OF GETINGE USA, INC. ANY AUTHORIZED REPRODUCTION MUST BEAR THIS ENTIRE LEGEND.
NOTES:
1) UNIT MAY BE CONNECTED TO EXHAUST EITHER FROM THE TOP OR THE REAR OF THE CONNECTION.
2) UNIT SHOWN WITH 2' RAMPS:
3' OR 4' RAMPS ARE ALSO AVAILABLE:
RAMP LENGTH INCLINE
2' 13%
3' 9%
4' 7%
SEE NOTE 2
SEE NOTE 1
3'-3" (991)
3' (914)
2'-9" (838)
2'-6" (762)
2'-6" (762)
2'-10" (864)
4'-4" (1321)
MECHANICAL CORE
2'-10" (864)
1'-11" (584)
2'-11" (889)
3'-2" (965)
6'-2" (1880) WALL OPENING
4'-4" (1321) UNIT WIDTH
2" (51)
BARRIER WALL FLANGE
8'-4" (2540)
8'-5" (2565) RECOMMENDED WALL OPENING
7'-8" (2337) UNIT HEIGHT
6'-6" (1981) DOOR OPENING
5'-4" (1626) DISPLAY HEIGHT
LOAD END
2'-0" (610)
FINISHED FLOOR
5" (127) RAMP HEIGHT
UNIT LENGTH
MIN. SERVICE ACCESS
3'-0" (914) DOOR OPENING
SEE NOTE 2
78003 – 80" CHAMBER
78004 – 98" CHAMBER
78005 – 112" CHAMBER
② 7'-4" (2235) 8'-10" (2692) 10'-0" (3048)
③ 11'-10" (3607) 13'-4" (4064) 14'-6" (4420)
GETINGE 7800 A-SERIES CART WASHER
LEFT HAND FLOOR MOUNTED UNIT SHOWN
UTILITY REQUIREMENTS ARE SHOWN ON SHEET 7
SERVICE MARKETING ENGRG CHECK DRAWN BY ED 2/4/03 SCALE NTS
THIS DRAWING WAS MADE USING AUTOCAD SOFTWARE. CHANGES SHOULD BE MADE TO THE DATABASE AND NOT TO THIS TRACING. THE FILENAME IS: HS4099-7 THIS PLOT MADE:
GETINGE USA, Inc. 1777 East Henrietta Road Rochester, NY 14623-3133
SIZE A SHEET 5 OF 7
PART NO. HS4099 REV B
SEE SHEET 1
LTR ECO NO. BY DATE REVISIONS
SCALE: 1 = 1 CHECK FOR REDUCTION

Figure 3–1. 7800A Washer (HS4099, sheet 6 of 7)

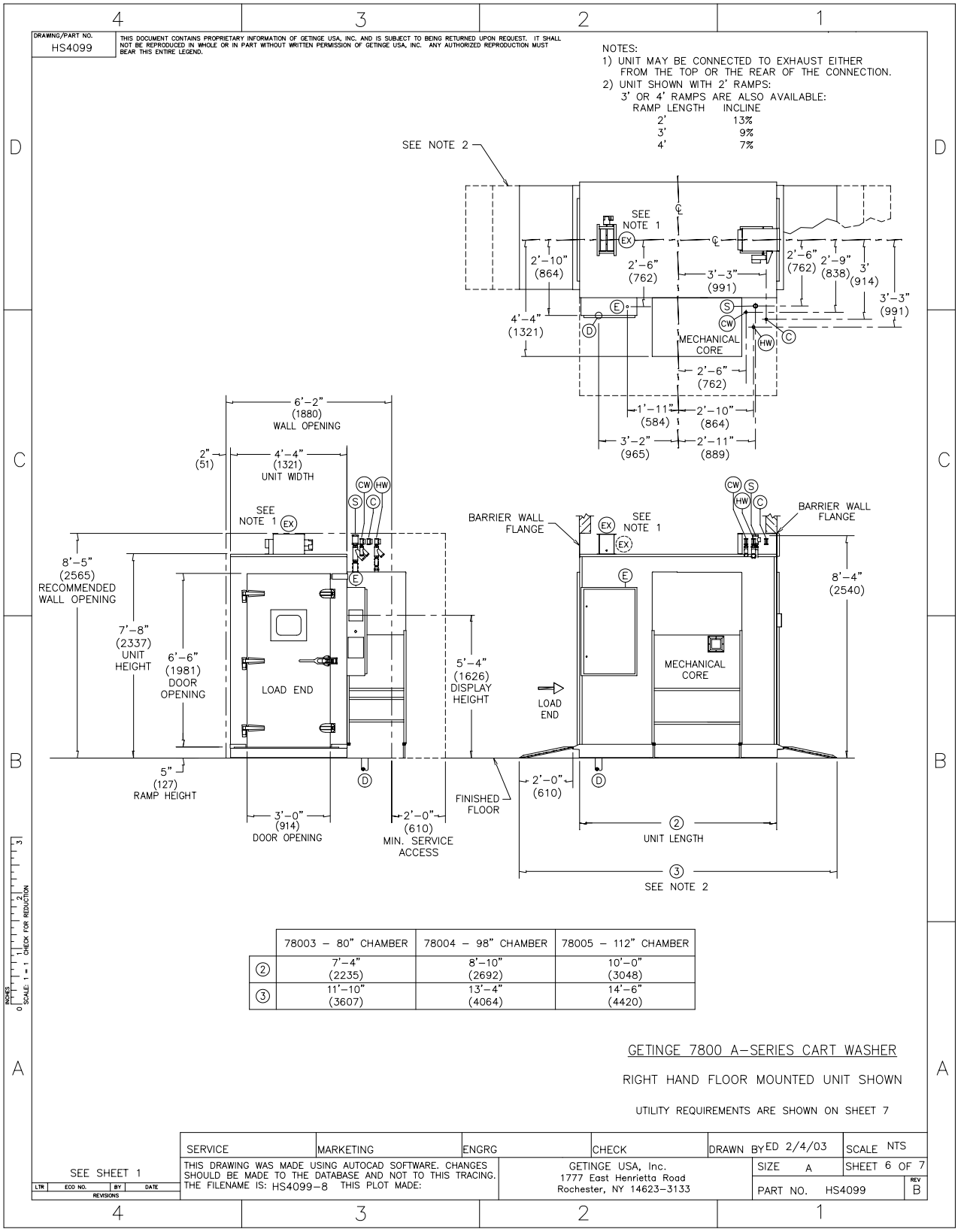

DRAWING/PART NO.
HS4099
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF GETINGE USA, INC. AND IS SUBJECT TO BEING RETURNED UPON REQUEST. IT SHALL NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT WRITTEN PERMISSION OF GETINGE USA, INC. ANY AUTHORIZED REPRODUCTION MUST BEAR THIS ENTIRE LEGEND.
NOTES:
1) UNIT MAY BE CONNECTED TO EXHAUST EITHER FROM THE TOP OR THE REAR OF THE CONNECTION.
2) UNIT SHOWN WITH 2' RAMPS:
3' OR 4' RAMPS ARE ALSO AVAILABLE:
RAMP LENGTH INCLINE
2' 13%
3' 9%
4' 7%
SEE NOTE 2
SEE NOTE 1
2'–10" (864)
2'–6" (762)
3'–3" (991)
2'–6" (762)
2'–9" (838)
3' (914)
3'–3" (991)
4'–4" (1321)
MECHANICAL CORE
2'–6" (762)
1'–11" (584)
2'–10" (864)
3'–2" (965)
2'–11" (889)
6'–2" (1880) WALL OPENING
2" (51)
4'–4" (1321) UNIT WIDTH
8'–5" (2565) RECOMMENDED WALL OPENING
7'–8" (2337) UNIT HEIGHT
6'–6" (1981) DOOR OPENING
LOAD END
5'–4" (1626) DISPLAY HEIGHT
5" (127) RAMP HEIGHT
3'–0" (914) DOOR OPENING
2'–0" (610) MIN. SERVICE ACCESS
FINISHED FLOOR
BARRIER WALL FLANGE
8'–4" (2540)
2'–0" (610)
UNIT LENGTH
SEE NOTE 2
78003 – 80" CHAMBER
78004 – 98" CHAMBER
78005 – 112" CHAMBER
② 7'–4" (2235) 8'–10" (3048) 10'–0" (3048)
③ 11'–10" (3607) 13'–4" (4064) 14'–6" (4420)
GETINGE 7800 A–SERIES CART WASHER
RIGHT HAND FLOOR MOUNTED UNIT SHOWN
UTILITY REQUIREMENTS ARE SHOWN ON SHEET 7
SERVICE MARKETING ENGRG CHECK DRAWN BY ED 2/4/03 SCALE NTS
THIS DRAWING WAS MADE USING AUTOCAD SOFTWARE. CHANGES SHOULD BE MADE TO THE DATABASE AND NOT TO THIS TRACING. THE FILENAME IS: HS4099–8 THIS PLOT MADE:
GETINGE USA, Inc.
1777 East Henrietta Road
Rochester, NY 14623–3133
SIZE A SHEET 6 OF 7
PART NO. HS4099 REV B
SEE SHEET 1
LTR ECO NO. BY DATE
REVISIONS
SCALE: 1 = 1 CHECK FOR REDUCTION

Figure 3–1. 7800A Washer (HS4099, sheet 7 of 7)

DRAWING/PART NO. HS4099

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF GETINGE USA, INC. AND IS SUBJECT TO BEING RETURNED UPON REQUEST. IT SHALL NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT WRITTEN PERMISSION OF GETINGE USA, INC. ANY AUTHORIZED REPRODUCTION MUST BEAR THIS ENTIRE LEGEND.

UTILITY REQUIREMENTS				
UTILITY	ON UNIT CONNECTION	PRESSURE RANGE DYNAMIC	7800 DEMAND	7800 CONSUMPTION PER CYCLE
(S) = STEAM	1 1/2" IPS	40–50 PSI.	650 LB/HR	78003: 45 LBS/CYCLE 78004: 45 LBS/CYCLE 78005: 58 LBS/CYCLE
(CW) = COLD WATER	3/4" IPS	40–60 PSI.	VENTED: 150 GPH NON–VENTED: 600 GPH	VENTED: 19 GAL/CYCLE NON–VENTED: 79 GAL/CYCLE
(HW) = HOT WATER 110 – 120 DEG.F	1" IPS	40–60 PSI.	950 GPH	78003: 12 GAL/CYCLE 78004: 12 GAL/CYCLE 78005: 14 GAL/CYCLE
(D) = DRAIN	2" TUBING (3" FLOOR DRAIN REQUIRED)	NA	50 GPM	78003 78004 VENTED: 31 GAL/CYCLE NON–VENTED: 91 GAL/CYCLE 78005 VENTED: 33 GAL/CYCLE NON–VENTED: 93 GAL/CYCLE
(C) = CONDENSATE	3/4" IPS	NA	NA	NA
(EX) = EXHAUST SEE NOTE 5	6.5" x 10" (165 x 254) FLANGED	800 CFM AT 1/4" NEGATIVE STATIC PRESSURE	NA	NA
(E) = ELECTRICAL		FULL LOAD AMPS	RECOMMENDED SERVICE DISCONNECT SEE NOTE 7	
208 V 3 PH 60 Hz 5 WIRE (L1 L2 L3 N G)		38.8	60 A	
240 V 3 PH 60 Hz 4 WIRE (L1 L2 L3 G)		33.8	60 A	
380 V 3 PH 50 Hz 4 WIRE (L1 L2 L3 G)		20.8	30 A	
415 V 3 PH 50 Hz 4 WIRE (L1 L2 L3 G)		19.1	30 A	
480 V 3 PH 60 Hz 4 WIRE (L1 L2 L3 G)		16.7	30 A	
600 V 3 PH 60 Hz 4 WIRE (L1 L2 L3 G)		14.5	30 A	

RADIANT HEAT LOSS – BTU/HR – VENTED UNIT					
	PASS THRU ONE WALL		PASS THRU TWO WALLS		
	CONTROL END	REMOTE END	CONTROL END	REMOTE END	RECESS AREA
78003 (80")	16000	10000	10000	10000	6000
78004 (98")	18000	11000	11000	11000	7000
78005 (112")	19000	11500	11500	11500	7500

RADIANT HEAT LOSS – BTU/HR – NON VENTED UNIT					
	PASS THRU ONE WALL		PASS THRU TWO WALLS		
	CONTROL END	REMOTE END	CONTROL END	REMOTE END	RECESS AREA
78003 (80")	18000	10500	10500	10500	7500
78004 (98")	19000	11500	11500	11500	7500
78005 (112")	20000	12000	12000	12000	8000

OPERATING ENVIRONMENTAL CONDITIONS	
TEMPERATURE	10°C (50°F) TO 40°C (104°F)
PRESSURE	ATMOSPHERIC FROM 0–6500 FT.(2000M)
RELATIVE HUMIDITY	10 TO 90% NON–CONDENSING
VOLTAGE FLUCTUATIONS (Main supply)	NOT TO EXCEED ±10% OF THE NOMINAL VOLTAGE
OVERVOLTAGE CATAGORY	II
POLLUTION DEGREE	2

NOTES:
1) IT SHALL BE THE CUSTOMERS RESPONSIBILITY TO INSURE BY USE OF PRESSURE REGULATORS OR OTHER MEANS THAT MAXIMUM SPECIFIED PRESSURES ARE NOT EXCEEDED. DYNAMIC PRESSURE IS MEASURED DURING FLOW CONDITIONS. STATIC PRESSURE IS MEASURED DURING SHUT–OFF CONDITIONS. STATIC PRESSURE SHALL NOT EXCEED 100 PSI FOR ANY SERVICE CONDITION AND MUST BE MEASURED AT POINT OF CONNECTION TO WASHER.
2) IT SHALL BE THE CUSTOMERS RESPONSIBILITY TO ELIMINATE WATER OR STEAM HAMMER CONDITIONS SHOULD THEY OCCUR IN THE SERVICE PIPING.
3) IT SHALL BE THE CUSTOMERS RESPONSIBILITY TO PROVIDE A PROPERLY SIZED AND LOCATED DRAINAGE SYSTEM IN ACCORDANCE WITH THE NATIONAL PLUMBING CODE. CONSIDER WHAT OTHER EQUIPMENT IS TIED TO DRAIN TO ELIMINATE SLOW DRAINAGE OR BACKUP. IF SITE CONDITIONS DICTATE THAT THE WASHER WILL DUMP WATER DIRECTLY TO PIT, THE PIT SHOULD BE WATER–PROOFED.
4) IT SHALL BE THE CUSTOMERS RESPONSIBILITY TO ENSURE THAT WATER SUPPLIES ARE PROPERLY PROTECTED FOR INTERNAL CROSS CONNECTION CONTROL IN ACCORDANCE WITH LOCAL BUILDING AND PLUMBING REQUIREMENTS.
5) IT SHALL BE THE CUSTOMERS RESPONSIBILITY TO PROVIDE A VENTING SYSTEM CAPABLE OF EXHAUSTING 800 CFM MEASURED AT THE POINT OF CONNECTION TO THE WASHER. THE SYSTEM SHOULD BE A DEDICATED, CORROSION PROOF & WATER TIGHT VENT. SLOPE VENT BACK TO WASHER.
6) IT SHALL BE THE CUSTOMERS RESPONSIBILITY TO COMPLETE ALL ELECTRICAL CONNECTIONS USING PROPERLY SIZED WIRING IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
7) IT SHALL BE THE CUSTOMERS RESPONSIBILITY TO PROVIDE A FUSED DISCONNECT SWITCH IN ALL ELECTRICAL SUPPLY LINES AT THE WASHER LOCATION.
8) IT SHALL BE THE CUSTOMERS RESPONSIBILITY TO PROVIDE NON–SLIP FLOORING ON BOTH APPROACH RAMP AREAS.
9) ALL DIMENSIONS GIVEN ARE FROM FINISHED SURFACES.
10) ALL DIMENSIONS ARE FEET/INCHES (MILLIMETERS).
11) DRAWING NOT TO SCALE.
12) THE UNIT SHOWN IS THE 78003 – 80" LONG CHAMBER.
13) CLEARANCE FOR BUILDING EGRESS MUST BE CHECKED. THE UNIT IS ALWAYS SHIPPED DISASSEMBLED. THE LARGEST SECTION IS THE SUMP BASE. SIZES:
78003 = 6" x 71" x 95"
78004 = 6" x 71" x 113"
78005 = 6" x 71" x 127"

GETINGE 7800 A–SERIES CART WASHER

UNIT DIMENSIONS ARE SHOWN ON SHEETS 1 – 6

INCHES 0 1 2 3 SCALE: 1 = 1 CHECK FOR REDUCTION

SEE SHEET 1

LTR	ECO NO.	BY	DATE
REVISIONS			

SERVICE	MARKETING	ENGRG	CHECK	DRAWN BY ED 2/4/03	SCALE NTS
THIS DRAWING WAS MADE USING AUTOCAD SOFTWARE. CHANGES SHOULD BE MADE TO THE DATABASE AND NOT TO THIS TRACING. THE FILENAME IS: HS4099–9 THIS PLOT MADE:		GETINGE USA, Inc. 1777 East Henrietta Road Rochester, NY 14623–3133		SIZE A	SHEET 7 OF 7
				PART NO. HS4099	REV B

Section 4 Seismic Anchoring Drawings

Seismic anchoring drawings for the 7800A washer are included in the following pages.

Figure 4–1. 7800A Washer (700488, sheet 1 of 12)

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING

GETINGE/CASTLE PART NO. 700488

GETINGE USA
ROCHESTER, NEW YORK

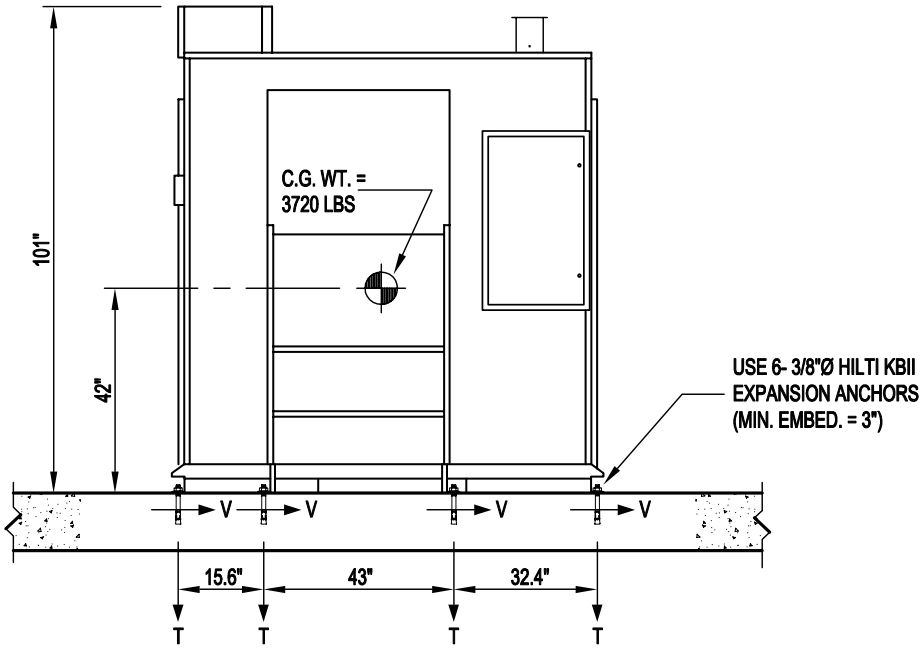
MODEL 78003
CART AND UTENSIL WASHER
(SLAB ON GRADE)

DES. R. LA BRIE
EASE JOB NO. 36-0306
DATE 5/5/03
SHEET 1 OF 12 SHEETS
700488

REVISION		ECO NUMBER	DATE
CURRENT	A	121179	5/16/03
PREVIOUS			

SEISMIC ANCHORAGE

SLAB ON GRADE



T_{MAX} = 116 LBS / BOLT
V_{MAX} = 346 LBS / BOLT

ELEVATION

NOTES:

1. FORCES ARE DETERMINED PER 2001 CALIFORNIA BUILDING CODE - SECTION 1632A AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE.
   HORIZONTAL FORCE (V_H) = 0.50W - (C_a = .66 & R_p = 3)
   VERTICAL FORCE (V_V) = 0.33(V_H)
2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS CALCULATION ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN.

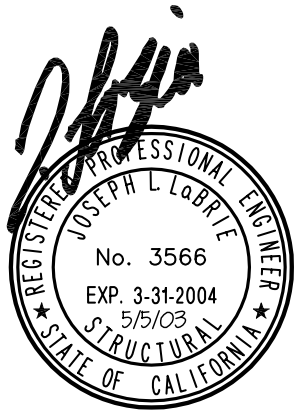


Figure 4–1. 7800A Washer (700488, sheet 2 of 12)

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING

GETINGE/CASTLE PART NO. 700488

GETINGE USA
ROCHESTER, NEW YORK

DES. R. LA BRIE
EASE JOB NO. 36-0306
DATE 5/5/03

SHEET 2 OF 12 SHEETS

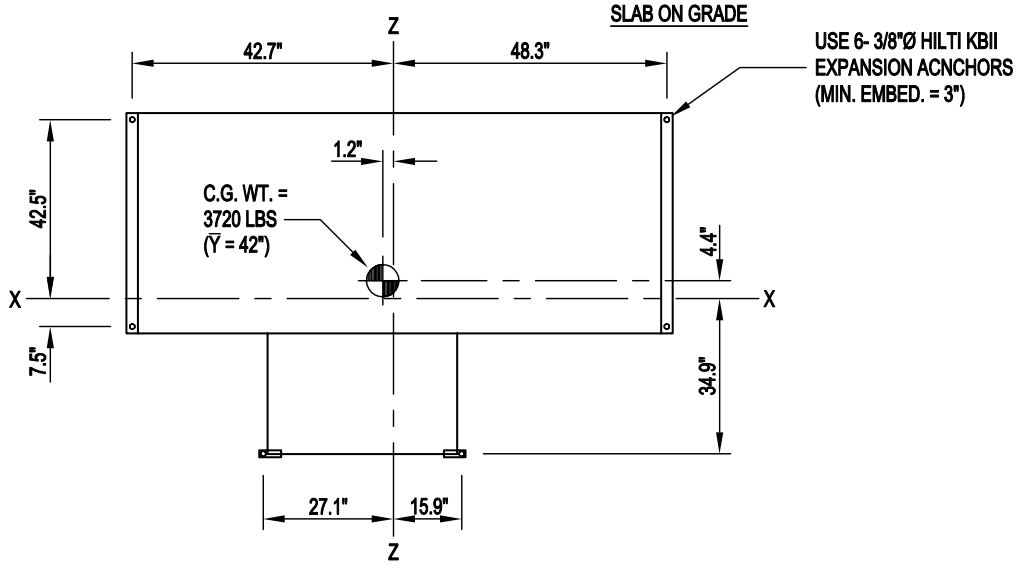
700488

MODEL 78003
CART AND UTENSIL WASHER
(SLAB ON GRADE)

REVISION		ECO NUMBER	DATE
CURRENT	A	121179	5/16/03
PREVIOUS			

SEISMIC ANCHORAGE

SLAB ON GRADE



PLAN AT BASE

LOADS:

WEIGHT = 3720 LBS
HORIZONTAL FORCE (V_H) = 1860 LBS
VERTICAL FORCE (V_V) = 620 LBS

BOLT GROUP PROPERTIES:

I_{X-X} = 6161 in.^{4}
I_{Z-Z} = 9300 in.^{4}
I_{Y-Y} = 15461 in.^{4}

MOMENTS:

M_{XX} = 1860#(42") + (3720# - 620#)4.4" = 91,760"#
M_{ZZ} = 1860#(42") + (3720# - 620#)1.2" = 81,776"#
M_{YY} = 1860#(4.6") = 8,556"#

BOLT FORCES:

TENSION (T)

$$T_{X\text{-}AXIS} = \frac{91760"\#(42.5")}{6161} - \frac{3720\# - 620\#}{6} = 116 \text{ LBS / BOLT}$$

$$T_{Z\text{-}AXIS} = \frac{81776"\#(48.3")}{9300} - \frac{3720\# - 620\#}{6} = 0 \text{ LBS / BOLT}$$

$$T = 116\# + 0\#\,(0.3) = 116 \text{ LBS / BOLT (MAX)}$$

SHEAR (V)

$$V = \frac{1860\#}{6} + \frac{8556"\#\sqrt{42.5^2 + 48.3^2}}{15461} = 346 \text{ LBS / BOLT (MAX)}$$

Figure 4–1. 7800A Washer (700488, sheet 3 of 12)

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING

GETINGE/CASTLE PART NO. 700488

GETINGE USA
ROCHESTER, NEW YORK

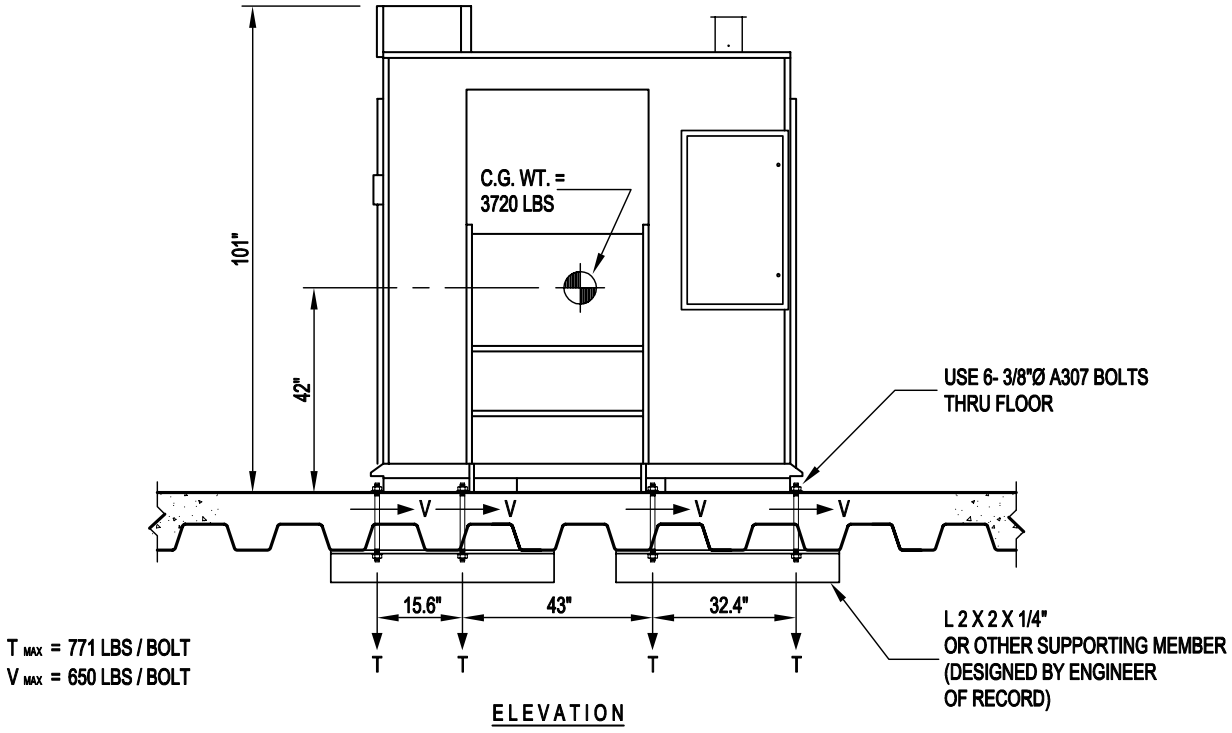
MODEL 78003
CART AND UTENSIL WASHER
(UPPER FLOOR)

DES. R. LA BRIE
EASE JOB NO. 36-0306
DATE 5/5/03
SHEET 3 OF 12 SHEETS
700488

REVISION		ECO NUMBER	DATE
CURRENT	A	121179	5/16/03
PREVIOUS			

SEISMIC ANCHORAGE

UPPER FLOOR



ELEVATION

NOTES:

1. FORCES ARE DETERMINED PER 2001 CALIFORNIA BUILDING CODE - SECTION 1632A AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE.
   HORIZONTAL FORCE (V_H) = 0.94W - (C_a = .66 & R_p = 3)
   VERTICAL FORCE (V_V) = 0.33(V_H)
2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS CALCULATION ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN.

Figure 4–1. 7800A Washer (700488, sheet 4 of 12)

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING

GETINGE/CASTLE PART NO. 700488

GETINGE USA
ROCHESTER, NEW YORK

DES. R. LA BRIE
EASE JOB NO. 36-0306
DATE 5/5/03

SHEET 4 OF 12 SHEETS

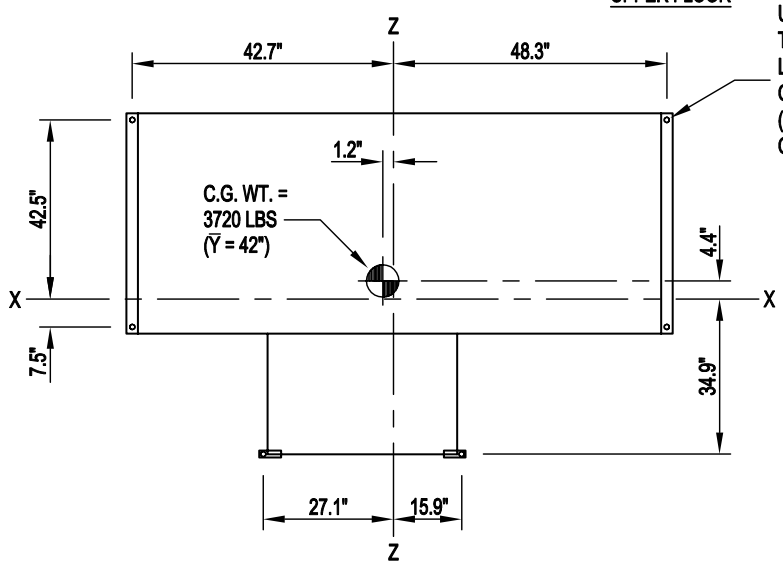
700488

MODEL 78003
CART AND UTENSIL WASHER
(UPPER FLOOR)

REVISION		ECO NUMBER	DATE
CURRENT	A	121179	5/
PREVIOUS			

SEISMIC ANCHORAGE

UPPER FLOOR



PLAN AT BASE

LOADS:

WEIGHT = 3720 LBS
HORIZONTAL FORCE (V_H) = 3497 LBS
VERTICAL FORCE (V_V) = 1166 LBS

BOLT GROUP PROPERTIES:

I_{X-X} = 6161 in.^{4}
I_{Z-Z} = 9300 in.^{4}
I_{Y-Y} = 15461 in.^{4}

MOMENTS:

M_{XX} = 3497#(42") + (3720# - 1166#)4.4" = 158,112"#
M_{ZZ} = 3497#(42") + (3720# - 1166#)1.2" = 149,939"#
M_{YY} = 3497#(4.6") = 16,086"#

BOLT FORCES:

TENSION (T)

$$T_{X\text{-}AXIS} = \frac{158112"\#(42.5")}{6161} - \frac{3720\# - 1166\#}{6} = 665 \text{ LBS / BOLT}$$

$$T_{Z\text{-}AXIS} = \frac{149939"\#(48.3")}{9300} - \frac{3720\# - 1166\#}{6} = 353 \text{ LBS / BOLT}$$

$$T = 665\# + 353\#(0.3) = 771 \text{ LBS / BOLT (MAX)}$$

SHEAR (V)

$$V = \frac{3497\#}{6} + \frac{16086"\#\sqrt{42.5^2 + 48.3^2}}{15461} = 650 \text{ LBS / BOLT (MAX)}$$

Figure 4–1. 7800A Washer (700488, sheet 5 of 12)

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING

GETINGE/CASTLE PART NO. 700488

GETINGE USA
ROCHESTER, NEW YORK

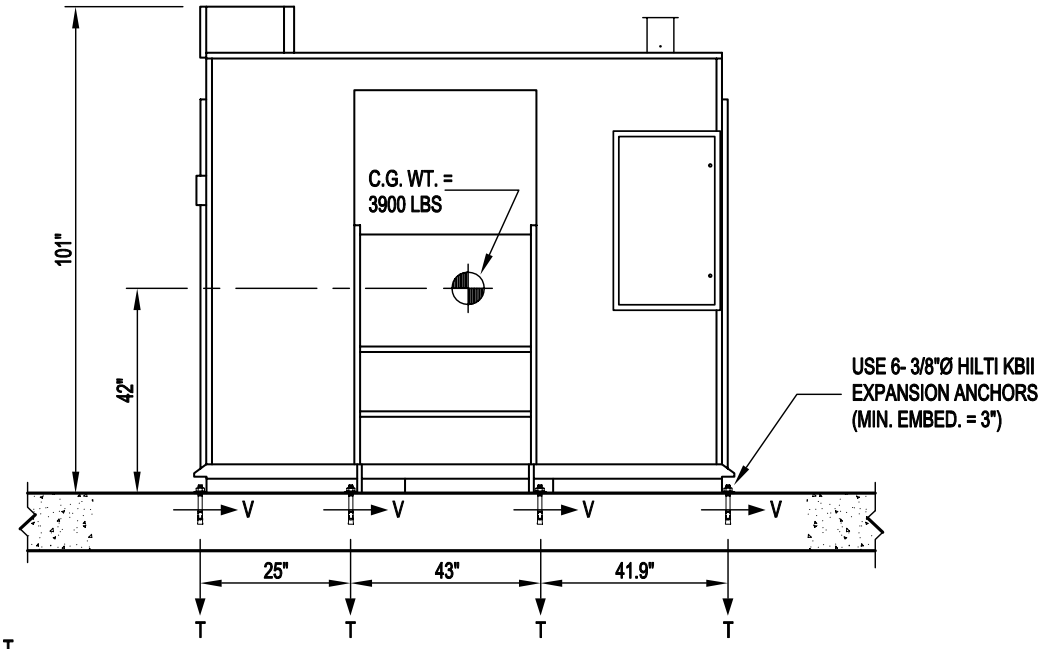
MODEL 78004
CART AND UTENSIL WASHER
(SLAB ON GRADE)

DES. R. LA BRIE
EASE JOB NO. 36-0306
DATE 5/5/03
SHEET 5 OF 12 SHEETS
700488

REVISION		ECO NUMBER	DATE
CURRENT	A	121179	5/16/03
PREVIOUS			

SEISMIC ANCHORAGE

SLAB ON GRADE



T_{MAX} = 122 LBS / BOLT
V_{MAX} = 367 LBS / BOLT

ELEVATION

NOTES:

1. FORCES ARE DETERMINED PER 2001 CALIFORNIA BUILDING CODE - SECTION 1632A AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE.
   HORIZONTAL FORCE (V_H) = 0.50W - (C_a = .66 & R_p = 3)
   VERTICAL FORCE (V_V) = 0.33(V_H)
2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS CALCULATION ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN.

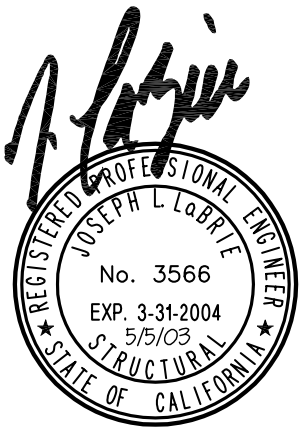


Figure 4–1. 7800A Washer (700488, sheet 6 of 12)

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING

GETINGE/CASTLE PART NO. 700488

GETINGE USA
ROCHESTER, NEW YORK

DES. R. LA BRIE
EASE JOB NO. 36-0306
DATE 5/5/03

SHEET 6 OF 12 SHEETS

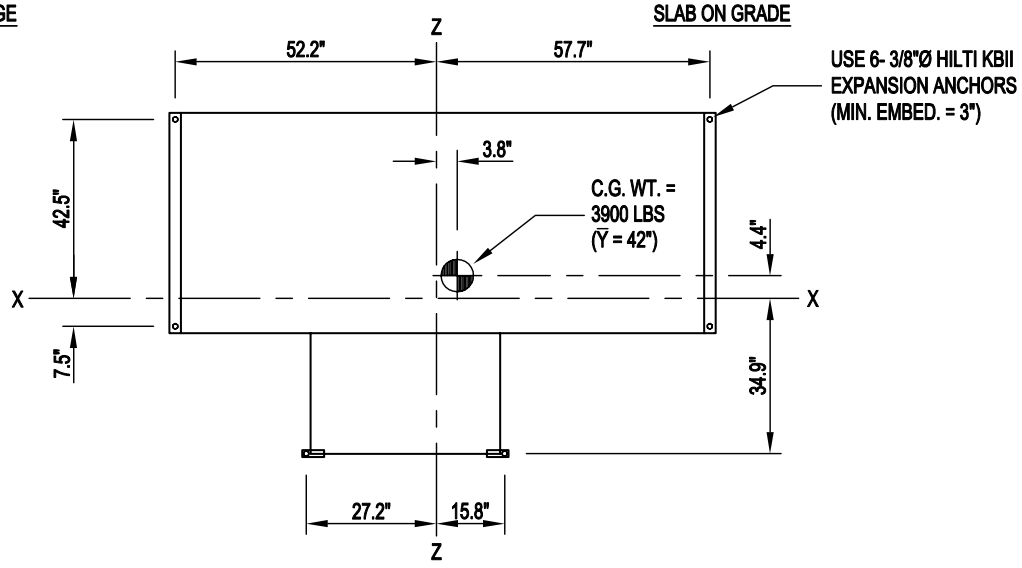
700488

MODEL 78004
CART AND UTENSIL WASHER
(SLAB ON GRADE)

REVISION		ECO NUMBER	DATE
CURRENT	A	121179	5/16/03
PREVIOUS			

SEISMIC ANCHORAGE

SLAB ON GRADE



PLAN AT BASE

LOADS:

WEIGHT = 3900 LBS
HORIZONTAL FORCE (V_H) = 1950 LBS
VERTICAL FORCE (V_V) = 650 LBS

BOLT GROUP PROPERTIES:

I_{X-X} = 6161 in.^{4}
I_{Z-Z} = 13098 in.^{4}
I_{Y-Y} = 19259 in.^{4}

MOMENTS:

M_{XX} = 1950#(42") + (3900# - 650#)4.4" = 96,200"#
M_{ZZ} = 1950#(42") + (3900# - 650#)3.8" = 94,250"#
M_{YY} = 1950#(5.8") = 11,310"#

BOLT FORCES:

TENSION (T)

$$T_{X\text{-AXIS}} = \frac{96200\text{"\#}(42.5\text{"})}{6161} - \frac{3900\text{\#} - 650\text{\#}}{6} = 122 \text{ LBS / BOLT}$$

$$T_{Z\text{-AXIS}} = \frac{94250\text{"\#}(57.7\text{"})}{13098} - \frac{3900\text{\#} - 650\text{\#}}{6} = 0 \text{ LBS / BOLT}$$

$$T = 122\text{\#} + 0\text{\#}\,(0.3) = 122 \text{ LBS / BOLT (MAX)}$$

SHEAR (V)

$$V = \frac{1950\text{\#}}{6} + \frac{11310\text{"\#}\sqrt{42.5^2 + 57.7^2}}{19259} = 367 \text{ LBS / BOLT (MAX)}$$

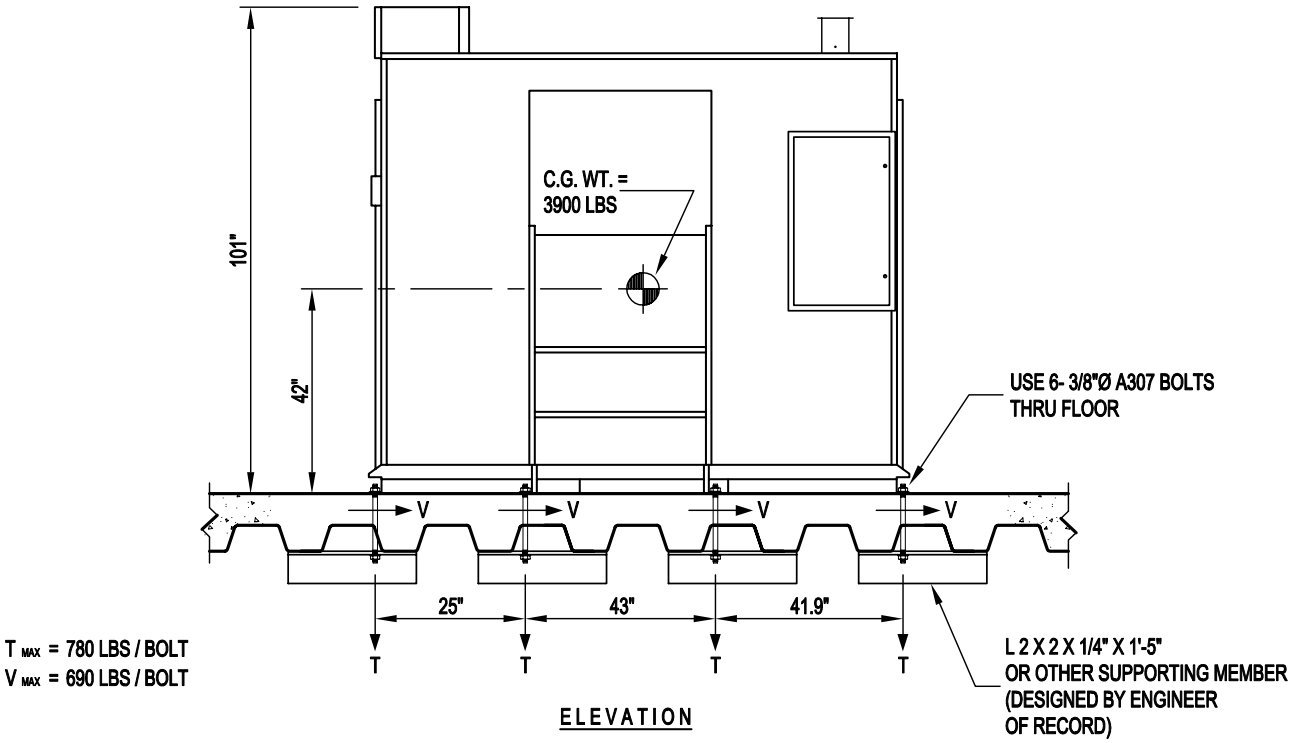
Figure 4–1. 7800A Washer (700488, sheet 7 of 12

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING		GETINGE/CASTLE PART NO. 700488
GETINGE USA ROCHESTER, NEW YORK	DES. R. LA BRIE EASE JOB NO. 36-0306	SHEET 7 OF 12 SHEETS
MODEL 78004 CART AND UTENSIL WASHER (UPPER FLOOR)	DATE 5/5/03	700488

REVISION		ECO NUMBER	DATE
CURRENT	A	121179	5/16/03
PREVIOUS			

SEISMIC ANCHORAGE

UPPER FLOOR



ELEVATION

NOTES:

1. FORCES ARE DETERMINED PER 2001 CALIFORNIA BUILDING CODE - SECTION 1632A AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE.
   HORIZONTAL FORCE (V_H) = 0.94W - (C_a = .66 & R_p = 3)
   VERTICAL FORCE (V_V) = 0.33(V_H)
2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS CALCULATION ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN.

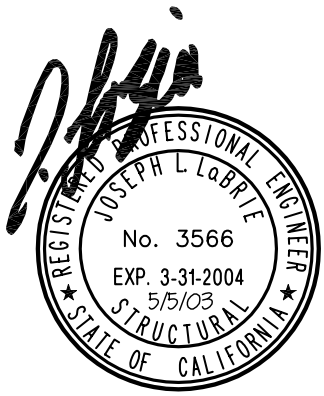


Figure 4–1. 7800A Washer (700488, sheet 8 of 12)

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING

GETINGE/CASTLE PART NO. 700488

GETINGE USA
ROCHESTER, NEW YORK

DES. R. LA BRIE
EASE JOB NO. 36-0306
DATE 5/5/03

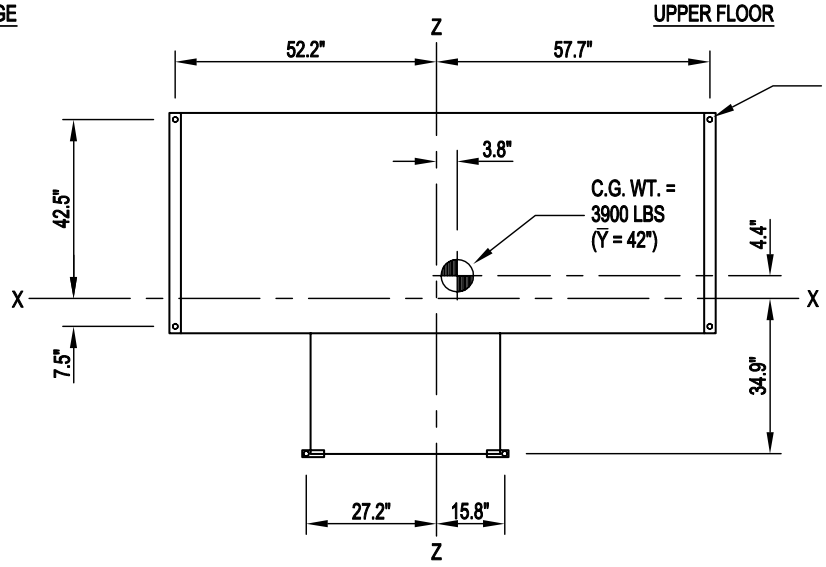
SHEET 8 OF 12 SHEETS

700488

MODEL 78004
CART AND UTENSIL WASHER
(UPPER FLOOR)

REVISION		ECO NUMBER	DATE
CURRENT	A	121179	5/16/03
PREVIOUS			

SEISMIC ANCHORAGE



PLAN AT BASE

UPPER FLOOR

USE 6- 3/8"Ø A307 BOLTS
THRU FLOOR TO
L 2 X 2 X 1/4" X 1'-5"
OR OTHER SUPPORTING MEMBER
(DESIGNED BY ENGINEER
OF RECORD)

LOADS:

WEIGHT = 3900 LBS
HORIZONTAL FORCE (V_H) = 3666 LBS
VERTICAL FORCE (V_V) = 1222 LBS

BOLT GROUP PROPERTIES:

I_{X-X} = 6161 in.^{4}
I_{Z-Z} = 13098 in.^{4}
I_{Y-Y} = 19259 in.^{4}

MOMENTS:

M_{XX} = 3666#(42") + (3900# - 1222#)4.4" = 165,755"#
M_{ZZ} = 3666#(42") + (3900# - 1222#)3.8" = 164,148"#
M_{YY} = 3666#(5.8") = 21,263"#

BOLT FORCES:

TENSION (T)

$$T_{X\text{-}AXIS} = \frac{165755"\#(42.5")}{6161} - \frac{3900\# - 1222\#}{6} = 697 \text{ LBS / BOLT}$$

$$T_{Z\text{-}AXIS} = \frac{164148"\#(57.7")}{13098} - \frac{3900\# - 1222\#}{6} = 277 \text{ LBS / BOLT}$$

$$T = 697\# + 277\#(0.3) = 780 \text{ LBS / BOLT (MAX)}$$

SHEAR (V)

$$V = \frac{3666\#}{6} + \frac{21263"\#\sqrt{42.5^2 + 57.7^2}}{19259} = 690 \text{ LBS / BOLT (MAX)}$$

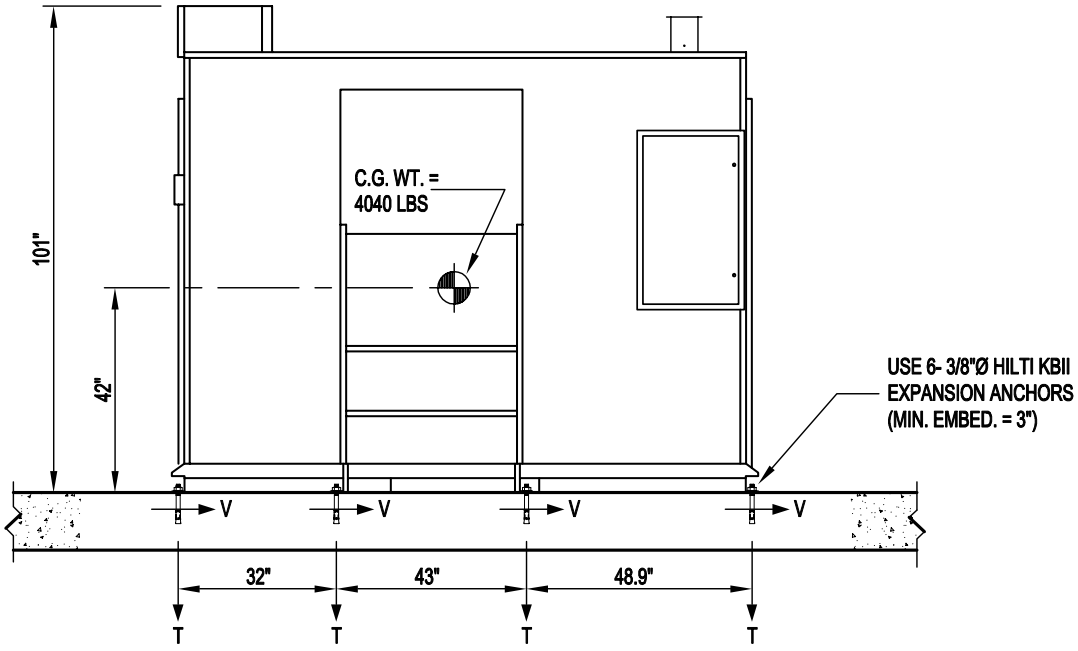
7800A Washer (700488, sheet 9 of 12)

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING		GETINGE/CASTLE PART NO. 700488
GETINGE USA ROCHESTER, NEW YORK	DES. R. LA BRIE EASE JOB NO. 36-0306	SHEET 9 OF 12 SHEETS
MODEL 78005 CART AND UTENSIL WASHER (SLAB ON GRADE)	DATE 5/5/03	700488

REVISION		ECO NUMBER	DATE
CURRENT	A	121179	5/16/03
PREVIOUS			

SEISMIC ANCHORAGE

SLAB ON GRADE



T_{MAX} = 126 LBS / BOLT
V_{MAX} = 368 LBS / BOLT

ELEVATION

NOTES:

1. FORCES ARE DETERMINED PER 2001 CALIFORNIA BUILDING CODE - SECTION 1632A AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE.
   HORIZONTAL FORCE (V_H) = 0.50W - (C_a = .66 & R_p = 3)
   VERTICAL FORCE (V_V) = 0.33(V_H)
2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS CALCULATION ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN.

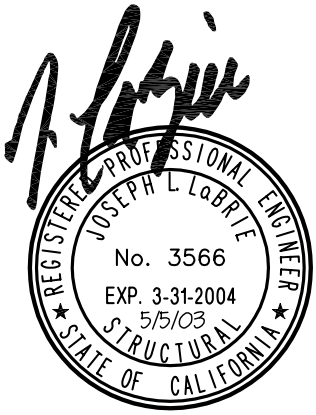


Figure 4–1. 7800A Washer (700488, sheet 10 of 12)

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING

GETINGE/CASTLE PART NO. 700488

GETINGE USA
ROCHESTER, NEW YORK

DES. R. LA BRIE
EASE JOB NO. 36-0306
DATE 5/5/03

SHEET 10 OF 12 SHEETS

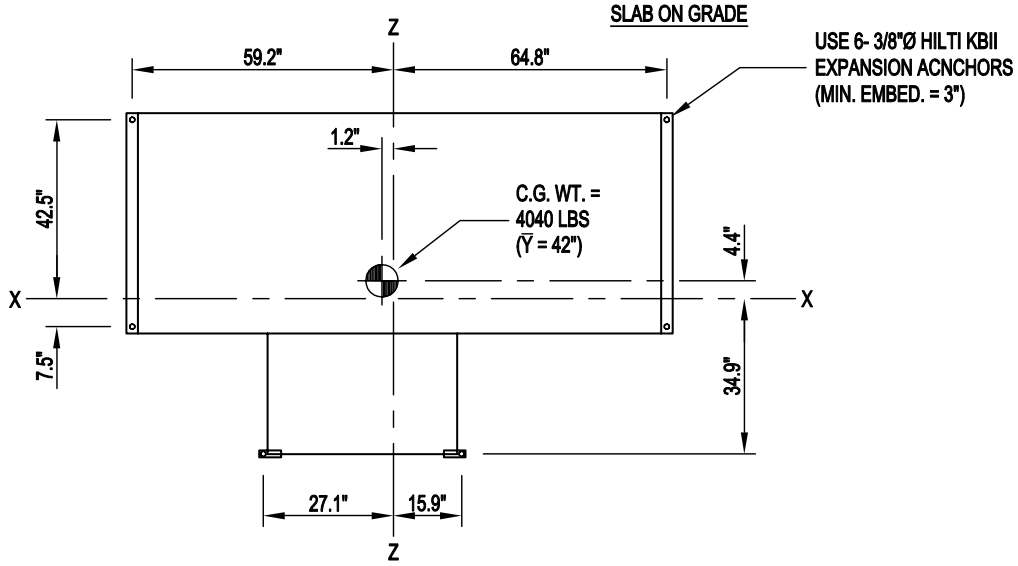
700488

MODEL 78005
CART AND UTENSIL WASHER
(SLAB ON GRADE)

REVISION		ECO NUMBER	DATE
CURRENT	A	121179	5/16/03
PREVIOUS			

SEISMIC ANCHORAGE

SLAB ON GRADE



PLAN AT BASE

LOADS:

WEIGHT = 4040 LBS
HORIZONTAL FORCE (V_H) = 2020 LBS
VERTICAL FORCE (V_V) = 673 LBS

BOLT GROUP PROPERTIES:

$I_{X\text{-}X}$ = 6161 in.^{4}
$I_{Z\text{-}Z}$ = 16395 in.^{4}
$I_{Y\text{-}Y}$ = 22556 in.^{4}

MOMENTS:

M_{XX} = 2020#(42") + (4040# - 673#)4.4" = 99,655"#
M_{ZZ} = 2020#(42") + (4040# - 673#)1.2" = 88,880"#
M_{YY} = 2020#(4.56") = 9,211"#

BOLT FORCES:

TENSION (T)

$$T_{X\text{-AXIS}} = \frac{99655"\#(42.5")}{6161} - \frac{4040\# - 673\#}{6} = 126 \text{ LBS / BOLT}$$

$$T_{Z\text{-AXIS}} = \frac{88880"\#(64.8")}{16395} - \frac{4040\# - 673\#}{6} = 0 \text{ LBS / BOLT}$$

$$T = 126\# + 0\#\,(0.3) = 126 \text{ LBS / BOLT (MAX)}$$

SHEAR (V)

$$V = \frac{2020\#}{6} + \frac{9211"\#\sqrt{42.5^2 + 64.8^2}}{22556} = 368 \text{ LBS / BOLT (MAX)}$$

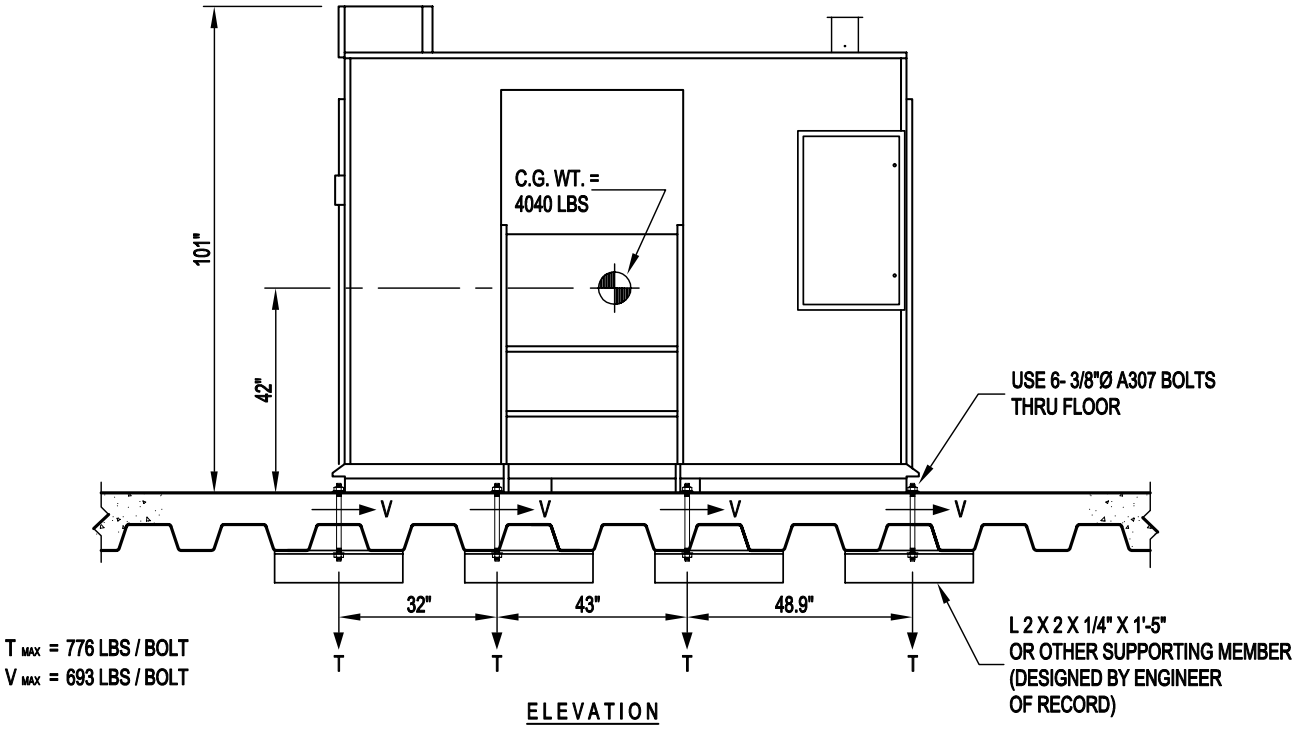
Figure 4–1. 7800A Washer (700488, sheet 11 of 12)

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING		GETINGE/CASTLE PART NO. 700488
GETINGE USA ROCHESTER, NEW YORK	DES. R. LA BRIE EASE JOB NO. 36-0306	SHEET 11
MODEL 78005 CART AND UTENSIL WASHER (UPPER FLOOR)	DATE 5/5/03	OF 12 SHEETS 700488

REVISION		ECO NUMBER	DATE
CURRENT	A	121179	5/16/03
PREVIOUS			

SEISMIC ANCHORAGE

UPPER FLOOR



ELEVATION

NOTES:

1. FORCES ARE DETERMINED PER 2001 CALIFORNIA BUILDING CODE - SECTION 1632A AND HAVE BEEN FACTORED TO REPRESENT WORKING DESIGN LOADS, NOT ULTIMATE.
   HORIZONTAL FORCE (V_H) = 0.94W - (C_a = .66 & R_p = 3)
   VERTICAL FORCE (V_V) = 0.33(V_H)
2. CENTER OF GRAVITY (C.G.) WEIGHT IS A MAXIMUM. THIS CALCULATION ENCOMPASSES ALL WEIGHTS UP TO THE MAXIMUM WEIGHT SHOWN.
3. ENGINEER OF RECORD FOR THE BUILDING SHALL PROVIDE SUPPORT STRUCTURE DESIGNED TO SUPPORT WEIGHTS AND FORCES SHOWN.

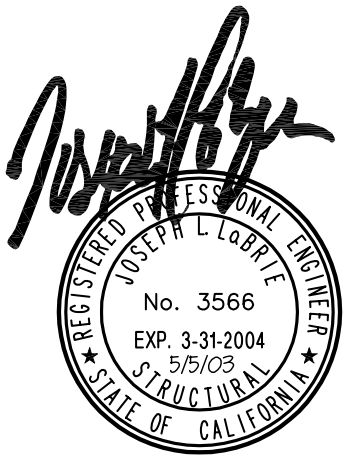


Figure 4–1. 7800A Washer (700488, sheet 12 of 12)

EASE EQUIPMENT ANCHORAGE & SEISMIC ENGINEERING

GETINGE/CASTLE PART NO. 700488

GETINGE USA
ROCHESTER, NEW YORK

DES. R. LA BRIE
EASE JOB NO. 36-0306
DATE 5/5/03

SHEET 12 OF 12 SHEETS

700488

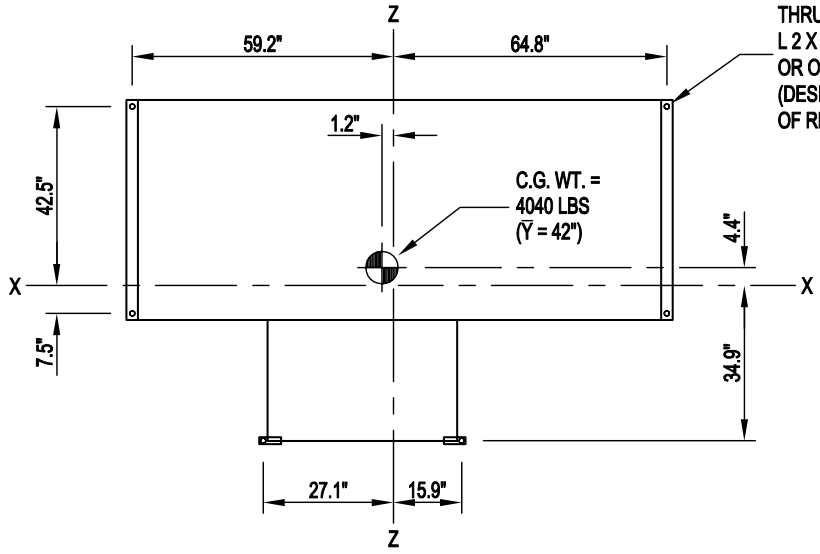
MODEL 78005
CART AND UTENSIL WASHER
(UPPER FLOOR)

REVISION		ECO NUMBER	DATE
CURRENT	A	121179	5/16/03
PREVIOUS			

SEISMIC ANCHORAGE

UPPER FLOOR

USE 6- 3/8"Ø A307 BOLTS
THRU FLOOR TO
L 2 X 2 X 1/4" X 1'-5"
OR OTHER SUPPORTING MEMBER
(DESIGNED BY ENGINEER
OF RECORD)



PLAN AT BASE

LOADS:

WEIGHT = 4040 LBS
HORIZONTAL FORCE (V_H) = 3798 LBS
VERTICAL FORCE (V_V) = 1266 LBS

BOLT GROUP PROPERTIES:

I_{X-X} = 6161 in.^{4}
I_{Z-Z} = 16395 in.^{4}
I_{Y-Y} = 22556 in.^{4}

MOMENTS:

M_{XX} = 3798#(42") + (4040# - 1266#)4.4" = 171,722"#
M_{ZZ} = 3798#(42") + (4040# - 1266#)1.2" = 162,845"#
M_{YY} = 3798#(4.56") = 17,319"#

BOLT FORCES:

TENSION (T)

$$T_{X\text{-}AXIS} = \frac{171722"\#(42.5")}{6161} - \frac{4040\# - 1266\#}{6} = 722 \text{ LBS / BOLT}$$

$$T_{Z\text{-}AXIS} = \frac{162845"\#(64.8")}{16395} - \frac{4040\# - 1266\#}{6} = 181 \text{ LBS / BOLT}$$

$$T = 722\# + 181\#(0.3) = 776 \text{ LBS / BOLT (MAX)}$$

SHEAR (V)

$$V = \frac{3798\#}{6} + \frac{17319"\#\sqrt{42.5^2 + 64.8^2}}{22556} = 693 \text{ LBS / BOLT (MAX)}$$

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Getinge USA, Inc.
1777 East Henrietta Road
Telephone (800) 950–9912 **Rochester, New York 14623–3133 USA** **Facsimile (800) 950–2570**